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John A. Townsley, Superintendent

January 31, 1975

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INTRODUCTION

Superintendent John A. Townsley

It was an honor for me to have been named as the seventh Superintendent of Yellowstone since establishment of the National Park Service in 1916. This was effective on August 4 following the seven-year tenure of Jack Anderson, who retired in June. I can think of no greater aspiration than to follow in the footsteps of Superintendent Anderson and the other outstanding men who have served in this great Park.

The story of the development of the National Park Ethic worldwide, including the evolution of park management and wildlife policies can all be told here in Yellowstone.

It was no surprise to me to find a staff of dedicated, hard working permanent and seasonal employees working together as a team in the best National Park Service tradition. This is not altogether unique to Yellowstone, only further confirmation of the strength the National Park Service has in its people resources.

The Yellowstone National Park Organization, with central office and three District Manager units has been in effect for several years, is well tested and seems to be working effectively. Any organization needs to constantly evaluate its management practices. This is particularly true in these times of rising costs and severe fund limitations. Consequently, we have initiated in-house management appraisals of the various activities with a goal for completion by September 1, 1976. Input is being sought from all working levels.

Continued attention will need to be given to the research needs and public relations aspects of the Northern Yellowstone Elk Herd, as well as to the Fisheries, Bear, and Bison Management Programs. Real progress has been made in the development of a Natural Fire Management Plan. Approval is anticipated in the near future. Concessions operations will receive major attention during the coming year.

Winter use is of considerable public interest with increasing demands and heavy Park involvement. The management of this activity continues to evolve, with new wrinkles worked out each year. Solid waste disposal remains high on our agenda of problems to be solved.

The Wilderness Proposal has not yet been approved by Congress. Considerable thought and effort has gone into the new Master Plan format.

These issues and others continue to motivate and challenge the staff, create job excitement and provide personal rewards for members of the Yellowstone and National Park Service teams.

It is our pleasure to submit the Annual Report for Yellowstone National Park.

John A. Townsley

C-O-N-T-E-N-T-S

INTRODUCTION

Superintendent John A. Townsley

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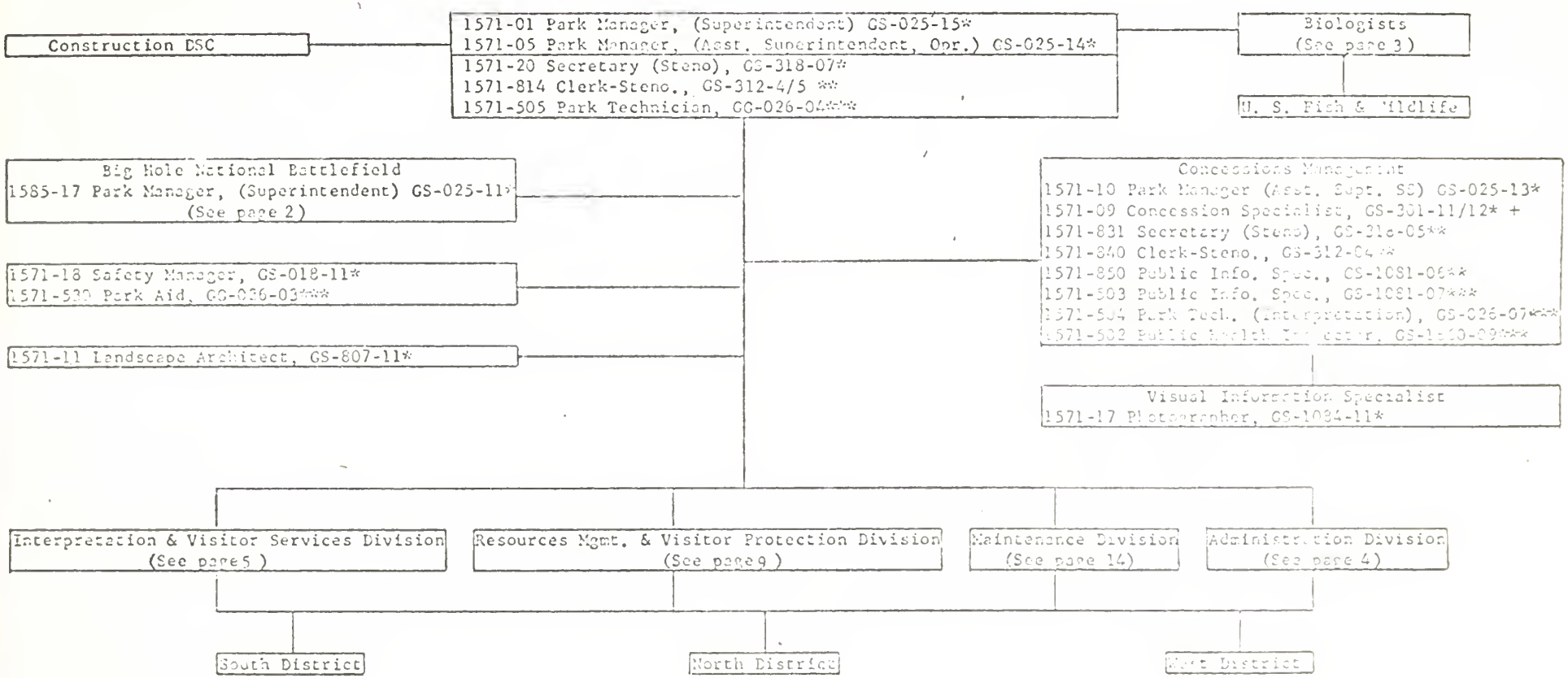
ORGANIZATIONAL CHART
YELLOWSTONE NATIONAL PARK



*Permanent

Approved:

I. ADMINISTRATION

A. Personnel

During 1975, 396 employees attended formal training courses for a total of 1085 training days; 0 Civil Service Commission courses presented on site; 15 other on-site courses presented by NPS employee instructors.

Eleven employees enrolled in correspondence courses with the Denver Regional Training Center of the Civil Service Commission.

B. Awards

Nine Special Achievement Awards for a total value of $1,900; two Superior Service Awards (See Appendix I for breakdown of awards.)

C. Union Management

Regular monthly meetings between Labor and Management have provided a useful exchange of information and concerns.

D. Equal Employment Opportunity

The Superintendent received a commendation from the Regional Director for achievement in EEO. The Park exceeded its goal for seasonal minority and female employees. Fifty-six minority seasonals were employed in 1975, which was approximately double the number for 1974.

E. Budget and Finance

Funding - Yellowstone National Park - FY 1976

General Management and Administration (including research expenses)	$ 878,900
Interpretation	342,900
Resource Management and Visitor Protection	1,079,600
Maintenance of Roads and Trails	1,202,700
Maintenance of Buildings, Utilities and Grounds	1,521,200
Motor Vehicle Operation and Replacement	816,000

I. ADMINISTRATION
Budget and Finance (continued)

Fee Collections (Includes 27,360 for purchase and depreciation of equipment	392,100
Educational expenses - Children of Employees, Yellowstone National Park (Available for operation)	295,000
* Quarters Maintenance and Operation (financed from rents paid by employees)	264,200
* Sanitation Collection and Disposal (solid waste)	102,700
* Water and Sewer Expense. Portion paid by concessioners and quarters	74,100

* Not financed from appropriated funds. The Government's share of the cost of operation of utilities is included in Maintenance of Buildings, Utilities, and Grounds.

In Fiscal Year 1976, the Fiscal Year covers July 1, 1975 through September 30, 1976. Hereafter the Government's Fiscal Year will be October 1 through September 30. The amounts given above are for 12-months operations through June 30, 1976. Thirty-three percent of these amounts were allowed for the additional three months operation July 1 - September 30, 1976. The amount will be inadequate for a normal operation by more than $400,000.

F. Concessions

Yellowstone Park Company

The threat of the gasoline shortage and raise in price of gasoline caused all concessioners to grossly underestimate travel for the 1975 operating season. The overnight lodging for Yellowstone Park Company showed an overall increase in occupancy rate of 11 percent, with the Snow Lodge showing the greatest increase for the year. The Snow Lodge cabins increased from a forty percent occupancy rate in 1974 to a 62 percent occupancy rate in 1975. The Lake Hotel, Fishing Bridge Cabins, and Old Faithful Lodge showed an increase in occupancy rate of 11 percent, 15 percent, and 14 percent respectively.

The number of complaints concerning Yellowstone Park Company increased from 145 in 1974 to 182 in 1975. As in the past, the greatest number of complaints concerned the food department, with the Old Faithful area receiving the greatest number

I. ADMINISTRATION
Concessions (continued)

of complaints and Canyon Village the second highest in the food department.

The Yellowstone Park Company received and placed into operation fifteen new buses for the 1975 season in an effort to improve transportation services to the visitor. Six additional new buses have been ordered and will be received sometime during the winter of 1975-76 to be available for service in the 1976 operating season.

Yellowstone Park Company for the past two seasons has been asked to provide campfire fuel for the various campgrounds throughout the park but has failed to do so. A five-year waiver has been obtained from the Company for the preferential right for this contract, and a prospectus will be issued during the winter or early spring of 1976 for an outside party to provide this service.

Hamilton Stores

There were no major changes in the Hamilton Stores' operation. They also were caught with the misjudgement of underestimating the 1975 travel season.

II. INTERPRETATION AND VISITOR SERVICES

A. General Interpretation

A new style of advertising for the interpretive program activities was inaugurated this past summer. The newspaper "Yellowstone Explorer" was printed six different times during the summer from June through September to conform with the progressive changes in the summer program. Feature articles and pictures were included along with the program of activities and list of concession facilities available. Splashes of color were also included which help make an attractive handout for visitor consumption. Versatility was the keynote of this method of laying out a summer program for it allowed each district to experiment with new programs, drop those which were not successful, and continually improve those which were retained. After some problems with the logistics of printing we settled with the Livingston Enterprise and expect to contract with them again for 1976.

The system of roadside transmitters was used for the third season at 1606 KHz. Failures of the message repeaters and tape cartridges continued to be a problem. One new solar powered unit was added at Steamboat Point and proved to be a very efficient trouble free unit. This unit was added as an experiment and financed by the Yellowstone Library and Museum Association.

Room J in the Mammoth Museum building was sound proofed and equipped as a recording studio so we are able to make professional master tapes and duplicate them for use in the park.

The mobile car radio transmitter continued to be used successfully to lead auto caravans and for stationary broadcasting at special points of interest. This technique was very useful during forest fires when there was a need for interpreting uncontrolled fires to the public. The winter camera safari was continued again for the second year in cooperation with the Gardiner Chamber of Commerce, using the radio car to lead caravans to Cooke City, Montana, through the winter range of bison and elk.

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

The Division assisted the Yellowstone Park Transportation Company with the training of bus drivers and monitoring of them and commentators during the summer season. As a result, these employees were better informed for their own public contact work, and better motivated to use the park wisely.

The orientation training program was again enriched this year by bringing in Josh Barkin, East Bay Regional Park, Oakland, California for special training in interpretation for children. Communications Specialist Bill Lewis continued his intensive monitoring and training of the new seasonal naturalists. Bill also carried on a pilot Personal Training Program for Interpreters at Norris and Grant Village. This package was prepared by Roy Graybill of the Division of Interpretation in Washington, D.C. and sent to select areas of the new system. The results were good and this type of training with the use of Vido-tape should continue to be used more extensively.

Some manpower turnover occurred in the Division staff during the year. Curator Thea Nordling transferred to Great Sand Dunes National Monument and was replaced by Russell Rocheford. Russ resigned after three months and we are currently recruiting to fill this curator position. Secretary Bonnie Neiswander resigned in July and was replaced by Suzi Swan on a part-time basis until the position was filled subject-to-furlough by Lesa Lyon who transferred from the U.S. Forest Service, Gallatin National Forest.

Summer field courses in geology and ecology were again offered this past year with a moderate degree of success. Two different geology courses and one ecology course were offered during five-day periods through the cooperation of Montana State University, the National Park Service and the Yellowstone Library and Museum Association. Next year a Yellowstone Institute will be inaugurated whereby ten one-week courses, in various subjects will be offered for credit or not through the Universities of Montana, Idaho and Wyoming. This Institute will have a salaried director, will headquarter at Grant Village and use the park resources as the field laboratory. The entire venture will be sponsored by the Yellowstone Library and Museum Association in cooperation with the National Park Service.

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

A series of five free seminars with guest lecturers were held during the past summer at Grant Village Visitor Center. Subjects ranged from algae distribution in the thermal basins to the distribution and varieties of mosquitos in Yellowstone. It is planned to continue and expand these seminars in 1976 as a valuable training aid for seasonal naturalists and other interested employees.

A technician was hired to provide slide duplicates to the Naturalist staff as needed, working under the direction of the Curator. The technician also began duplicating radio tapes and will continue this service in the future. In lieu of a permanent historian a seasonal historian was employed during the winter months to assist in cataloging, and indexing the archives. The historian is currently microfilming all the archives and rare documents files so that the archives will shortly be in good shape.

A Mr. Hugh Crandall, well known free-lance writer who has written a variety of interpretive material under contract for several national park areas is currently in residence here in Yellowstone. Mr. Crandall finished a new audio-visual show for the Canyon Visitor Center and is completing a winter use show for Yellowstone-Grand Teton and five nearby National Forests. Signed up as a Collaborator here in Yellowstone, Mr. Crandall has been offering his services free gratis and with special contracts to assist in improving the Yellowstone and Grand Teton interpretive programs.

B. District Interpretive Activities

Mammoth: The Mammoth staff consisted of nine seasonal naturalists, plus one supervisor who was also Acting North District Naturalist during the summer season. The Mammoth Visitor Center was open daily throughout the year with the exception of Christmas Day; however, it was regularly manned on a schedule basis only during the period from May 21 to October 31. Visitor Center attendance was 187,897 and the audio-visual program was presented 3,015 times to 38,448 visitors.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Again this year the special room set up with maps and pamphlets for use by backpackers to plan their trips before applying at the information desk for a backcountry permit proved to be a very useful method of operation.

Interpretive activities offered at Mammoth, with attendance figures in parentheses, were as follows: Upper Terrace Walk daily (1,316), Fort Yellowstone Twilight Walk four nights per week (1,274), nightly campfire programs at the Mammoth Campground (6,292), evening programs in the Mammoth Motor Inn five times a week primarily for hotel guests (7,665), and non-illustrated campfire programs at Indian Creek Campground six nights a week (3,114).

Three new programs were offered and proved to be successful in terms of a quality experience but not in terms of attendance. A nature walk up Bunsen Peak, a nature walk from Golden Gate to Mammoth, and an early morning wildlife walk were offered once a week on different days. These walks will not be offered in 1976. Roving roadside interpretation in the Swan Lake-Willow Park area was curtailed again this past summer in an attempt to save gasoline consumption.

Tower Falls: Two seasonal naturalists served the Tower Falls area presenting nightly campfire programs at the Tower Campground to (4,746) visitors. The popular Fossil Forest hike up Specimen Ridge was given three times per week to (610) people. Roving interpretive duty by the Tower Falls area naturalists amounted to (20,000) visitor contacts. Two new walks were added in the Tower Falls area this past summer. An early morning bird walk and the Lost Lake nature walk were offered once each per week and the Lost Lake nature walk were offered once each per week and proved to be very popular. A total of (153) people attended the bird walk and (216) participated in the Lost Lake walk.

Norris: The Norris Sub-District staff consisted of five seasonal interpreters, including one seasonal Sub-District Supervisor. The visitor season for the Norris Sub-District ran from late May through September. The museum remained the focal point of activity with visitation estimated to exceed 300,000 people. More interpretive activities were

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

offered at Norris than any previous year. Six walks were conducted daily in to the geyser basins for a total of 16,167 contacts. New activities for the summer were a half-day hike into Monument Geyser Basin (120); a moonlight geyser basin walk (550); and an early morning nature walk (54). Campfire programs were offered each evening with only one cancellation due to weather in 66 performances (5,307). With the availability of a government car for the first time interpretive activities were expanded in the Norris area including roving contact duty to more than 15,000 people in the Roaring Mountain, Norris Soldier Station, Artist Paint Pots, and Beryl Springs areas.

Old Faithful: The interpretive staff of the Sub-District consisted of thirteen seasonal Park Technicians (Interpretive Specialists) and three Park Aids, including one subject-to-furlough assistant Sub-District Naturalist. The permanent Sub-District Naturalist and park's Geothermal Specialist are on duty on a year round basis. Old Faithful Sub-District's summer interpretive operation began in late April with the opening of the Old Faithful Visitor Center, which, for most of the summer season, was open 13 1/2 hours per day. Formal programming began approximately June 1 and continued until the park closed. This programming was conducted in two general locations: Madison Junction and the Old Faithful area and surrounding geyser basins.

Generally, programs presented in the Madison Junction area were early evening talks and demonstrations (eg. backpacking demonstrations), guided walks and nighttime campfire slide shows. The total attendance to the 197 programs offered at Madison Junction was 21,844 park visitors. The average attendance at Madison programs was 59 visitors. The Madison Children's walk experienced the lowest attendance with an average of 10 visitors/program, whereas the Madison Campfire programs had the highest attendance with an average of 181 visitors/programs. The Madison Museum was again unmanned this year and had an estimated visitation of 53,000. The following compilation is for those programs offered at Madison Junction:

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Program	Attendance	No. of times offered	Average attendance
Horse Use Demo.	178	4	44.4
Backpacking Demo.	511	10	51.1
Flyfishing Demo.	343	9	38.1
Madison Children's Walk	506	49	10.3
Madison Campfire Program	19,919	110	181.1
Madison Star Gaze Program	387	15	25.8

Interpretive programs conducted in the Old Faithful area were guided walks, demonstrations and talks (slide programs) and film showing at the Visitor Center. Guided walks were conducted 399 times for 12,330 visitors. Talks, demonstrations and slide program presentations were conducted 101 times with a total attendance of 9,858 visitors. Throughout the summer, 94 unscheduled talks and walks were presented with 6,976 visitors participating. Visitations at the Old Faithful Visitor Center, for the season (189 days) totaled 646,369. The Center's nine minute film, "Yellowstone, A Living Sculpture", was shown approximately 3,947 times to an audience total of 260,091. A total of 51,007 visitors took part in the 791 formal interpretive presentations offered in the Old Faithful area. The attendance to these formal programs averaged 65 visitors. Roving interpretation was conducted during 99 days of operation with a total of 29,901 contacts. The following compilation is for those programs offered in the Old Faithful area:

Program	Attendance	No. of times offered	Average attendance
Pocket Basin Walk	845	34	24.9
Black Sand Basin Walk	4,151	107	38.8
Divide Lookout Hike	127	11	11.5
Biscuit Basin-VC Hike	2,232	85	26.3
Myriad Geyser Walk	24	2	12.0
Geyser Hill Walk	1,415	54	26.2

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Program	Attendance	No. of times offered	Average attendance
Horse Use Demo	178	4	44.4
Overnight Pack Trip	84	10	8.4
O.F. Children's Walk	70	9	7.8
Orienteering	59	5	11.8
Twilight Geyser Walk	3,343	83	40.3
Sketch Walk	39	4	9.8
V.C Evening Program	9,270	79	117.3
O.F. Star Gaze Program	351	13	27.0
Unscheduled Walk & Talk	6,976	94	74.2
V.C. film showings	260,091	3,947	65.9
Roving: (estimated)			
Biscuit Basin	2,108	56days	37.6
Fountain Paint Pots	7,512	82days	91.6
Midway	4,506	60days	75.1
Upper Geyser Basin	15,775	92days	171.5
Visitor Center	646,369	189days	3,419.9

The Old Faithful Sub-District's winter season started December 15 and was concluded March 20. The winter staff consisted of the Sub-District Naturalist, the park's Geothermal Specialist and three seasonal Park Technicians (Interpretive Specialists). Winter interpretive programs conducted in the Old Faithful area consisted of guided walks, which were conducted 81 times with 616 visitors participating, live talks (slide shows), which were presented 79 times and attended by 4114 visitors and the film "Yellowstone, A Living Sculpture" was presented 287 times to 4823 visitors. During the winter season the Old Faithful Visitor Center's visitation was 13,781 for 88 days of operation. One of the seasonal Interpretive Specialists for the Old Faithful Sub-District was assigned, for the winter, to the West Yellowstone-West Entrance-Madison Junction area. His duties were to provide interpretive and visitor contact services in that area. To fulfill his responsibilities the employee conducted evening slide programs five days a week in several facilities in the West Yellowstone community. In addition, the employee was responsible for conducting roving visitor contact between West Entrance and Madison Junction. Evening slide programs were presented 40 times, with a total attendance of

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

1769 visitors. Forty-three days were spent on roving contact and contact was made with 4,462 park visitors.

Grant Village: The interpretive staff of the Sub-District consisted of six seasonal Park Technicians (Interpretive Specialists), including the Sub-District Naturalist. The Visitor Center served a total 122,320 park visitors from May 25 to September 25. Throughout the month of June and for two weeks in July the center was open from 8:00 AM to 7:00 PM, but after a hourly visitation analysis, the hours of operation were changed for the remainder of the season to 8:00 AM to 6:00 PM. The Grant Village Sub-District offered and presented a full spectrum of interpretive walks and talks. These programs were offered a total of 324 times with a total visitor attendance of 19,992. In addition, the Visitor Center slide program was presented 1,816 times with a total of 40,550 park visitors attending. The following is a compilation of those interpretive programs that were offered on a regular basis in the Sub-District:

Program	Attendance	No. of times offered	Average attendance
West Thumb walk	3,590	90	40
Lake Side walk	1,263	80	16
G.V. Amphitheatre Program	13,078	89	147
Star Talk Program	586	16	37
Children's Program	90	13	7
Lewis Lake Campfire Program	1,109	20	55
Lake Thermal walk	85	3	28
Thumb Overlook walk	110	7	16
Ecology walk	41	4	10
Fish Ecology walk	40	2	20
West Thumb Roving	18,978	75days	253
Visitor Center	122,320	124days	986

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Mt. Washburn Lookout: Dick and Margie Fey were hired to operate the lookout this year and did an excellent job. They made themselves available to talk to nearly all of the groups led to the summit by the Canyon Naturalists. They also interpreted the free-burn philosophy as well as the other natural phenomena to many of the other visitors to the area. The Yellowstone Park Company did not run buses to the summit this year as they were unable to rent any of the smaller sized units properly equipped with air brakes, low gear ratios, etc. needed to negotiate the steep, rough, winding road. This year 3,716 hikers visited the lookout which was 5.7% fewer than in 1974. This may be a reflection of the colder, stormier weather this summer. No significant fires were visible from Mt. Washburn this year. Money was not available for modifying the entry room and, therefore, the planned exhibits have not yet been contracted.

Canyon: The Canyon Visitor Center was open daily from May 17 through October 15 serving 294,783 visitors, which is an increase of 7.1% over 1974. The interpretive staff consisted of ten seasonal naturalists including one supervisor and one assistant supervisor. While attendance at the visitor center and the campfire programs was up there was a decline in response to the other conducted activities. The new Canyon audiovisual show was available for use at the beginning of the season. One of the listening chairs received from Teton Park last spring was installed in the exhibit room and was equipped with a bicentennial message. One June 30 an earthquake (centered just west of Canyon) measuring 6.0 on the Richter scale shook the area considerably. On July 16 a large mass of the supporting rock collapsed from beneath the viewing platform at Inspiration Point. The area was immediately closed. On August 17 and 18 the old platform was obliterated and in September a new platform was developed farther back on the rim at a point which was determined to be safe and yet offered a good view. The beautiful view offered previously from the pinnacle is now a thing of the past - Yellowstone's living geology prevails again!

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Fishing Bridge-Bridge Bay: The Fishing Bridge Visitor Center was open daily from May 24 through September 16 serving 192,223 visitors, which is a 26.7% increase over 1974. The interpretive staff consisted of eleven seasonal naturalists, including one supervisor and one assistant supervisor. Illustrated talks were given four nights per week in the Lake Yellowstone Hotel. They were well attended and enthusiastically received. The Yellowstone Park Co. purchased a 12' x 12' projection screen during the summer, and is planning to put up panelling to separate the portion of the lobby used for programs from the rest of the main lobby which is so busy. The video program on the Yellowstone cutthroat trout was shown in the visitor center again this year. Additionally, work has begun on duplicating appropriate movies on video-tape for transmitting to the Lake Hotel and Lake Lodge for viewing on monitors set up in these areas. Plans are to have this medium in operation next summer.

Several new activities were instituted this year both at Canyon and Fishing Bridge. Included were such activities as backpacking and fly fishing demonstrations, photo walk, sketch walk, geology walk, bicycle tour, bird walk, group singing and mountain man talk. All were well received and served to provide a special-interest ingredient to the program. Generous assistance was provided by several Volunteers. They were especially helpful in serving the public at the visitor centers, but were involved in various other activities as well. An Assistant South District Naturalist position was authorized this year for the first time in several years. The position worked out very well providing better assistance and liaison to the seasonal interpreters working at the sub-district level.

C. Environmental Education

No formal workshops in environmental education were offered during 1975. Two groups of school children from the Butte, Montana school system spent two three-day sessions here in park and environmental awareness was emphasized. Earth Day was recognized in a cooperative effort with the U.S. Forest Service people and the Gardiner School System in Gardiner,

II. INTERPRETATION AND VISITOR SERVICES (continued)

C. Environmental Education (continued)

Montana. Incorporation of environmental awareness techniques and principles were included in many of the programs presented in our summer interpretive activities.

D. Yellowstone Library and Museum Association

The Association made a gross income of $161,956, a net of $32,121 up 20% over the previous year. Donations to the National Park Service totaled $42,316. Free publications, operation and purchase for park library, and assistance with historical research are continuing projects of the Association. Contributions toward a solar cell powered radio transmitter as an experimental energy source was a major contribution and successful. Other minor contributions were made toward interpretive innovation materials including living history costumes, special training for children's interpretation; sky programs; and assisting the interpretive programs at Big Hole National Battlefield and Grant-Kohrs National Historic Site.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

A. Law Enforcement

As in past years, crimes against property accounted for the majority of criminal activity in the park. Yellowstone, as well as many other parks and recreational areas, has become a prime target for the so-called "professional" thief. In one instance, the apprehension of one person cleared approximately twenty cases of theft in Yellowstone and many more cases in areas administered by the National Park Service. There were fewer cases of drug abuse during the year. Although much of this type of activity still goes on, it is carried on low-key or somewhat underground. Crimes against persons were down, with only two reported cases of a serious nature, one an attempted assault to commit murder and the other an alleged rape.

Collection of fines from the citation-bond system is a recurring problem with only about 75 percent of the violators responding on time and approximately another ten percent paying after followup attention. The Law Enforcement Office tried a more aggressive system of collection, which increased the closure of cases; however, due to the transient nature of the violator-visitor, it is an uphill battle.

The computerized record system is fully operational; however, the feedback is not always what is needed, nor is it always timely. Time and adjustment should solve most of the problems.

All permanent Rangers in the Visitor Protection field have completed the basic requirements for law enforcement training, with the exception of one who is scheduled for this training in March 1976. In addition, three Rangers attended the Advanced Law Enforcement School at the Montana Law Enforcement Academy, and three completed the Regional training given in Denver. All Rangers received the mandatory 40 hours a year of law enforcement training. The Law Enforcement Office provided approximately 60 man-days of training instruction in-house and 12 man-days to agencies and areas outside of Yellowstone. This year, and in the future, a larger portion of law enforcement training will concentrate on individual Ranger attitudes and the law enforcement image of the National Park Service.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

B. Regulations

The new fishing regulations have not been fully understood or accepted by all park visitors; however, the Park's continued educational program, for the most part, has been effective in interpreting the regulations for visitors.

Negative response from the general public to the 16-year old age limit for snowmobile operators resulted in a regulation change. Operators now include those persons 12 to 16 years of age, who are supervised by their parents, or those who have had approved safety training and are supervised by an adult.

C. Tort Claims

One major tort claim against the National Park Service and Yellowstone was adjudicated by suit. In the case of Harry Walker vs. the United States, a judgement of approximately $87,000 was made against the United States. At this time an appeal by the United States is pending. It is interesting to note that this decision seems to contradict a similar case of a year ago, that of Smith vs. the United States, which was decided in favor the the United States. The Walker case involved the killing of Mr. Walker by a grizzly bear, and the Smith case that of a boy burned in a hot pool. Both cases concern the responsibility of the government to adequately warn visitors of hazards in the Park.

It is expected that a thermal burn involving a three-year old girl, which occurred in October 1975, will result in a tort claim.

There were also four claims involving damage to visitor automobiles allegedly caused by government equipment. There was also another claim in which property of a visitor, found and turned over to the Park, was either lost or stolen while in the custory of the Park.

D. Weather Conditions

Precipitation for the year was close to normal; however, temperatures averaged more than three degrees below normal. The Spring months, February through May, averaged 5.4 degrees colder, and April was eight degrees below normal. Snowpack averaged about 122 percent of normal water content and this percentage remained fairly constant throughout the winter.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

E. Fish and Wildlife Management

It was not necessary during 1975 to either handle or destroy a grizzly bear. Two visitors were injured by chance encounters with grizzly bears in the backcountry. Only two damage cases could be attributed to grizzlies, although twelve occurred from unknown bears. Only one injury occured from a black bear on the roadside, and the only known death of a bear in the Park in 1975 was that of a black bear killed by a vehicle.

A relatively mild winter followed by a period of severe cold in the spring led to a sudden stress condition with an unusual concentration of mortality among elk in the Northern Herd. It is estimated that as many as 1500 elk, or roughly ten to twelve percent of the 1974 fall herd, may have died during the spring months. The situation was obvious to visitors as many carcasses were visible from the roads. This generated a few letters from those concerned about "waste" while at the same time it provided an excellent opportunity for observation of natural processes close at hand. At the end of the year elk started moving across the north boundary of the Park into Montana in large numbers and the State began preparations for a special hunt in the Gardiner area after the first of the year. There are no plans for a special hunt in the Gallatin area.

The brucellosis situation in bison has cooled considerably the past two or three years, but recent outbreaks of brucellosis in Montana have revived the subject somewhat. One bull left the Park near the West Entrance during the summer, but apparently returned before action could be taken by the State of Montana.

The 13-inch maximum length limit for cutthroat in Yellowstone Lake caused some confusion among fishermen this past summer. Some who apparently thought the rule was misprinted were keeping fish over thirteen inches. A better explanation in the printed regulations is planned for the 1976 season. Fishing remains excellent in most areas of the Park, especially in the catch and release waters. Those waters provide the visitor with an excellent opportunity to gain a genuine appreciation of wild trout and clean water.

F. Wilderness and Backcountry Management

Backcountry use continued to increase over 1974, but at a somewhat slower rate. There was a fourteen percent increase in

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NATIONAL PARK
LIBRARY

the number of backcountry permits issued, and a surprising twenty-six percent decrease in horse use. This decrease, double that of last year, is likely still due to the limit on the number of stock in each party, since use of horses for recreation seems to be growing in popularity elsewhere. The baggage-tag permit will continue in use in 1976 pending possible adoption of a Servicewide permit in 1977. No plans have been made for a reservation system.

G. Public Awareness

The primary cause of public displeasure or disagreement with park regulations or management practices remains a lack of awareness of either the primary objectives of a natural area or the specific reasons for our management practices. In almost every case of disagreement, a careful explanation of our reasons seems to suffice. Unresolved complaints were usually those which involved a definite consumptive attitude toward the resource, either for personal use or for profits from service to the user. This consumptive attitude is the greatest stumbling block to the management of a natural area, and in spite of the welcome trend in the opposite direction among younger people, it may be with us for some time.

A modification of this attitude is critical to our ungulate management program, as well as to the fisheries program. Recent interest in geothermal exploration in peripheral areas may generate pressure to tap reservoirs of steam or hot water in the Park. Even more important, however, is to get information to the general public regarding our objectives and the means for achieving them. A great deal of support for our programs is being lost through ignorance, and an expanded public information program could do much to offset this loss.

H. Park Visitation

The park road opening operation was delayed due to a late spring and heavy snows. As a result all park roads were not open for public travel on the traditional May 1 opening date. The road between the West Entrance and Mammoth was opened on May 3 and the road from Madison to Old Faithful on the following day, May 4. The East and South Entrances were open on May 11. The Beartooth Highway and operation of the Northeast Entrance were opened on June 13.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION
Park Visitation (continued)

Road closures for the winter began on October 14, when the Beartooth Highway and operation of the Northeast Entrance were closed for the season. Heavy snows caused closure of the East and South Entrances on October 29 and the West Entrance on November 10.

Annual park visitation totaled 2,239,483 persons. This total reflects an increase of 16.1 percent over the previous year. Winter visitation, January through April and November through December, totaled 86,312 persons. This total reflects an increase of 6.9 percent over the previous year during the same period.

I. Entrance and User Fee Collections

Station	Single Visit Summer	Single Visit Winter	Golden Eagle Passports	Total
South	$ 16,674.00	$ 428.50	$ 5,930.00	$ 23,032.50
West	255,497.00	14,648.00	44,870.00	315,015.00
East	209,628.50	247.50	67,930.00	277,806.00
North	94,109.50	896.00	17,300.00	112,305.50
Northeast	48,728.50	--	10,540.00	59,268.50
Total	$624,637.50	$16,220.00	$146,570.00	$787,427.50

In addition to fees collected from Single Visit Permits and Golden Eagle Passports, 22,053 Golden Age Passports were issued free of charge to persons 62 years of age and older.

Campground fees were collected in 14 campgrounds (12 regular plus two group campgrounds) from June 25 through Labor Day, September 1. The amount collected totaled $341,624.33.

J. Special Use Permits

The Visitor Services Office issued 21 Special Use Permits during 1975.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

K. Soil and Moisture

The herbicide application for control of Dalmatian toadflax was not conducted. Comparison plots for areas of application versus non-application have been established to determine the effectiveness of this program.

Final cleanup of the Lupine horse pasture by helicopter completed this project.

Work was started toward complete removal of the Reese Creek fence along the north boundary. The old Blister Rust Control Park Camp in Carnelian Drainage was removed and additional removal work was accomplished on the buffalo drift fence in the Lamar Valley.

No evidence was found of the test release of Calophasis lunula last season, and the conclusion reached was that biological control of Dalmatian toadflax with this insect will probably not prove feasible. Harsh climate is no doubt the limiting factor for this insect.

L. Fire Management

Wildland: The fire season was comparatively quiet during 1975. A normal amount of fire ignitions was experienced, but weather patterns were such that fuels retained enough moisture to prevent these fires from spreading significantly. Twenty-six fires were recorded for a total burn of six acres. Eighteen of these were lightning-caused and eight man-caused. Nine lightning fires were allowed to burn under our natural fire policy begun in 1972. Total acreage burned by these natural fires was 2.05. Cost of suppressing 17 fires was approximately $6,500. Cost of monitoring the nine natural fires was approximately $2,050.

An environmental assessment has been completed as the preliminary step in allowing an expansion of our natural fire program to include essentially all of the Park. Public comment on this assessment was actively shought throughout the year and at this time comments are entirely favorable toward the alternative of allowing lightning fires to play a completely natural role in the wilderness of Yellowstone. A fire plan has been prepared to cover this alternative. Man-caused fires will continue to be suppressed under the proposed policy. Bridger-Teton National Forest has an

approved natural fire plan with identical objectives. A cooperative agreement is currently being worked out between Yellowstone and Bridger-Teton which will allow natural fires to cross between the two agencies on our south and east boundaries. Approximately 2,300,000 acres are involved in this interagency plan, which will be the first of its kind.

Structural

There were only four structural fires during the year for a value loss of $343.00. All of the losses were incurred by the Yellowstone Park Company. Three of the fires involved Old Faithful Inn and the fourth a cabin at Roosevelt Lodge. A new 1,000 GPM pumper truck has been purchased for the Lake area to provide more adequate protection for the recognized structural fire potential in the Lake-Fishing Bridge complex.

M. Forestry Program

The pruning project was completed during the season. A total of 3,850 acres in Mammoth have been treated for blister rust. Periodic checks will be made to determine the future status of limber pine in this area.

Due to absence of funding from the United States Forest Service, no insect detection and status surveys were made. While we do not foresee control efforts, we feel the need for "status" information regarding the Mountain pine beetle in the southwest portion of the Park is important.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

N. Central Communications Center Records Summary

	Year		
	1973	1974	1975
Employee Vehicle Registrations	2,618	2,226	2,660
Visitor Identification Notices	522	458	638
Percent Located	19%	18%	17.6%
Backcountry Permits Recorded	4,267	5,583	6,365
No. of People on Permit	13,833	16,801	17,994
Teletype Messages Sent on Law Enforcement Teletype System	961	1,254	1,152
NCIC Inquiries	703	1,022	1,118
Law Enforcement Records Checks	1,739	1,965	2,013
All Points Bulletins	36	25	44
Field Interrogation Cards Filed	1,539	993	805
Long Distance Telephone Calls Placed Through Switchboard Operator	9,922	13,409	15,558

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

0. Research Accomplished

Appendix II - A Comment on the History of the Northern Yellowstone Elk
Douglas B. Houston

Appendix III - Natural vs. Man-Caused Death of Wild Animals in National Parks
Glen F. Cole Information Paper No. 26, May 1975

Appendix IV - Nature and Man in Yellowstone National Park
Glen F. Cole Information Paper No. 28, June 1975

Appendix V - Population Regulation and The Consequences of Artifically Feeding Wild Animals
Glen F. Cole Information Paper No. 26, June 1975

Appendix VI - Management Involving Grizzly Bears in Yellowstone National Park, 1970-74
Glen F. Cole

IV. MAINTENANCE

A. Buildings

New major oil burner units were installed in the Supply Center and Automotive Repair Shop. Thirteen buildings received thermal insulation. Combination storm windows were installed on six older buildings in Mammoth. Eight fireplaces were installed.

Full trailer covers were constructed over eight sites.

The Superintendent's residence was rehabilitated. Baths and kitchens were remodeled in Quarters 80 and 81. Transit homes were rehabilitated at East Entrance, Old Faithful, and Northeast Entrance.

B. Grounds

Animal repellent, TAT-CO, in varying concentrations, was applied to 30 trees in the Mammoth developed area in an attempt to find a more effective and less costly means of protection against elk and deer damage than fencing. Results will be monitored by the Park Landscape Architect.

C. Utilities

Construction was begun to develop a new water source for the Tower Junction area. An iodine disinfection system was installed on the system.

Approximately 500 lineal feet of sewerline in the Canyon area were replaced to correct excessive infiltration problems.

The Park assumed operation of new wastewater treatment facilities at Tower, Fishing Bridge, Norris, Old Faithful, Madison, and Grant Village. A minor amount of construction work remains to be done on these facilities before they are complete.

D. Roads and Trails

Park crews repaired two washout areas on Craig Pass. The larger of the washouts had to be repaired with log cribbing.

IV. MAINTENANCE

Roads and Trails (continued)

Park crews resurfaced 0.5 miles of road in the Mammoth concessioner cabin area plus 1.0 miles from the Lava Creek picnic area towards Blacktail Plateau.

The garbage loading ramp at Canyon was reconstructed and paved.

A severe earthquake registering 6.0 on the Richter Scale in June 1975 resulted in considerable road damage, particularly from rock slides at Obsidian Cliff between Norris and Madison.

Park crews obliterated and removed a portion of Inspiration Point overlook which was damaged by the June earthquake. A new viewing platform was completed by September 1975.

Twelve miles of road between Lamar Ranger Station and Pebble Creek were resealed.

Park crews seal coated 5.0 miles of road between Mammoth and Gardiner.

Routine tree hazard removal continued; however, it was minimal and no special projects were involved.

E. Construction

A total of thirty eight concrete vaults was installed at pit toilets at Pebble Creek, Slough Creek, Tower Fall and Indian Creek and Lewis Lake campgrounds.

Approximately 95 percent of the pollution abatement projects was completed during the year. The wastewater treatment facilities at Tower Junction, Tower Fall. Lake-Fishing Bridge, West Thumb, Grant Village, Old Faithful, Madison and Norris were finalized. The facilities at Norris, Tower Junction, Grant Village and West Thumb operated successfully for the major part of the season; those at Tower Fall, Lake-Fishing Bridge, Old Faithful and Madison were operated for a short time and are ready for start up next spring. A major modification of the Old Faithful facility to be undertaken next spring will not impair the sewage treatment process.

IV. MAINTENANCE

Construction (continued)

The Rim comfort station sewage collection system at Canyon is about 90 percent complete. All electrical connections are in place and operation of the facility will probably begin in July 1976.

Final resurfacing of the Norris to Canyon road is complete with the exception of shoulders and bituminous curbs.

The new sewage facility project at Big Hole National Battlefield was started, but due to material supply problems and inclement weather it was shut down for the winter. The projected completion date for this project is June 1976.

OTHER

A. Energy Conservation

All aspects of the ongoing Energy Conservation Program were continued. Specific improvements to facilities designed to conserve fuels are noted under "Maintenance, Section IV-A, Buildings."

B. Special Events

A retirement dinner honoring Superintendent Jack Anderson and his wife Dusty was held in the Multi-Purpose Room of the Mammoth School on June 18. Director Gary Everhardt, Regional Director Lynn Thompson, and approximately three hundred friends from surrounding communities, were in attendance. A note of excitement was added by President Ford's phone call to Jack to wish him well on his retirement. Jack and Dusty are now enjoying their new home in Ashland, Oregon.

A group of park managers from many countries throughout the World participated in the International Short Course in Yellowstone August 14-16. Co-sponsored by the National Park Service and the University of Michigan, representatives from both organizations, as well as the Yellowstone interpretive staff, aided in presenting the Course. Tours were arranged for the participants, during which time Yellowstone's Management Program was discussed and some interpretive programs audited. Yellowstone was only one of several parks included in the schedule for the participants. The Course is offered annually through the National Park Service Office of International Affairs in Washington.

Pennsylvania Congressman Joseph McDade was a Yellowstone visitor in August. On August 18 Superintendent Townsley accompanied him on a combined air-automobile orientation tour of the Park and hosted him on a Yellowstone Lake fishing trip. The Congressman exhibited considerable interest in funding for reconstruction of the Golden Gate viaduct.

Kansas Congressman Joe Skubitz, his wife Mary, and his Legal Counsel Michael C. Marden, were house guests of Mr. and Mrs. Trevor Povah at their Deep Well Ranch near West Yellowstone August 21-24. On August 22 Superintendent Townsley and Assistant Superintendent Haraden drove the group to Old Faithful where they were luncheon guests of John D. Amerman,

V. OTHER

Special Events (continued)

President and General Manager of Yellowstone Park Company. Assistant Superintendent Haraden drove the party to Grand Teton National Park on August 24.

Horace M. Albright, Superintendent of Yellowstone from 1919 to 1929, and his wife Grace were Park visitors on September 2-3. Mr. Albright met with Yellowstone employees in the Conference Room of the Headquarters Building at Mammoth the morning of the second to share with them his early day recollections of the Park. He later remarked to Mr. Haraden that his morning with the Yellowstone staff had added two years to his life. That evening the Albrights were hosted at an evening party at the home of John and Elaine Townsley, where they met with old time friends from Mammoth, Gardiner, Livingston and Bozeman.

Superintendent Townsley traveled with Superintendent Kerr of Grand Teton National Park on an orientation tour to Laramie, Casper, Cheyenne and Lander, Wyoming from September 29 to October 4. During the trip they met with the Governor's Travel Council, the Wyoming Recreation Department, Chambers of Commerce, and other State and local officials.

Superintendent Townsley and Assistant Superintendents Haraden and Hennesay attended the Interior and Insular Affairs Committee hearings sponsored by Senator Hansen on October 14 and 16 in Jackson and Cody respectively.

Congressman Baucus and his Staff Aide, Steve Rovig from Missoula, visited with Superintendent Townsley in Mammoth the morning of October 15. At noon Congressman Baucus rededicated the Gardiner Bridge, which was reconstructed. Superintendent Townsley also spoke at the ceremonies.

Sir Peter Ramsbotham, British Ambassador to the United States, his wife Eleanor, and his Secretary Jeremy Greenstock, were Yellowstone visitors October 17 to 19. They were met at the West Yellowstone airport and traveled by auto, motor boat, canoe and on foot to Shoshone Lake where they were hosted at a campout. On October 20 Assistant Superintendent Haraden drove them to the Jackson airport where they boarded the plane for their return to Washington, D.C.

C. Media Relations and Public Affairs

As a means of expediting coverage of ongoing events in the Park, many press releases were issued by telephone to various newspapers, radio, and television stations, rather than sending them by mail. There were 26 press releases issued throughout the year.

V. OTHER

D. Volunteers-in-Parks Program

Volunteers served in many capacities during the year, both in public contact work and behind the scenes. A total of 85 volunteers donated 7,777 hours of service in the following categories:

58 Interpretation
4 Research
15 Ranger Activities
4 Fish and Wildlife
3 Administration

Housing for volunteers during the summer is very limited so most volunteers during that time live in the Park as concession employees or as spouses of National Park Service employees. Volunteers serving during the fall, winter, and spring months are usually provided with housing.

The Fish and Wildlife Service, which has a resident staff in the Park, utilized four VIP's provided through the National Park Service in their research program. A Pennsylvania State University student in Yellowstone for ten weeks for her practicum experience, developed a special exhibit on natural fire. Our youngest volunteer was four years of age, the daughter of a seasonal interpreter. She assisted her father in contacting campers and providing safety information!

E. Cooperation With Other Agencies

Two joint USFS-NPS meetings were held during the year, one in Billings on February 19 and the other in Teton National Park on September 23.

Superintendent Townsley attended a Montana Fish and Game Department meeting in Helena on December 11 and 12.

The Superintendent continues as a member of the Governor's REACT Committee, encompassing all federal and state agencies in the State of Wyoming.

F. Accomplishment of Park Goals

Goals for the 1975 FY were reached in most cases because they were stated in realistic, obtainable terms. In 1976 the Park staff shifted the period covered by its annual goals to coincide with the new fiscal year, October 1 through September 30. This left one quarter of 1976 undocumented as far as goals are concerned.

V. OTHER

G. Safety

The Safety Program in Yellowstone continues to function well. Due to a full-time Safety Manager being in residence, it is believed that a greater percentage of accidents are reported and investigated. All fatalities and serious accidents are investigated and reviewed by a Board of Inquiry. One serious accident occurred when an employee picked up a broken powerline while it was still "hot." A serious burn resulted and the employee was unable to return to work for 37 days.

A comparison of accidents for the past two years is as follows:

	1974	1975
Fatalities	7	5
Employee Vehicle Accidents	20	27
Employee Lost-Time Accidents	9 (33 days)	8 (58 days)
Non-Disabling Injuries	56	41

H. Status of Planning

Under the new system of planning Yellowstone submitted a draft of the General Development Plan to the Regional Director on December 12, 1972.

No Congressional action has been taken on the Yellowstone Wilderness Proposal made in September 1971. It was sent to Congress in March 1972 and nothing has been done since that time.

No other major planning documents were completed during the year.

I. Christian Ministry

This inter-denominational ministry is related nationally to "A Christian Ministry in the National Parks." This past summer forty college and seminary students worked under the Yellowstone Director, Pastor Paul Christ, to provide

V. OTHER

Christian Ministry (continued)

services and ministry to visitors and park employees. No government funds are provided for support of the ministry. The program is self supporting with funds obtained primarily from offerings.

Services of Worship are held weekly at various locations in the Park with a total attendance of over 16,000 people. Counseling and referral for social problems, support for the hospitalized and accident victims, and ministry to help workers and travelers with special needs are provided during the summer.

Mr. Wayne Floyd, winter intern at the Old Faithful Snow Lodge offers weekly Services of Worship in the Old Faithful area and Reverend Paul Christ provides ministry and Services of Worship for residents of the Mammoth community with services held in the Yellowstone National Park Chapel.

Two Christian retreats were held for high school youths, one in March and another in November, with approximately twenty people in attendance. In addition this ministry sponsored an 30-voice choir composed of workers recruited in the Park. The choir presented the Christmas in August concert in three areas of the Park, featuring Handel's Messiah and Godspell. The concerts were attended by over 1000 people.

J. Big Hole National Battlefield

The Superintendent of Yellowstone continues to coordinate the management of Big Hole, with the Park staff assisting with large maintenance projects, interpretation, resource evaluation, and planning. Superintendent Al Schulmeyer has submitted his Annual Report to the Regional Director.

A major concern has been accomplishment of some new trail construction, exhibit and audiovisual rehabilitation, and revision of the Siege Area Trail Guide before the Centennial of the Battle of the Big Hole in 1977. Funds for most of these projects will not be available until FY 1977, but work did progress through donations from the Yellowstone Library and Museum Association and Yellowstone staff assistance.

SEPARATION SHEET Yellowstone NP
Archives

Type and Number of Item(s) (map, newspaper, clipping, photograph, etc.)

6 photographs
5 black + white
1 color

Description of Item(s) (include dates, names, topics, etc.)

Park Staff
Earthquake damage
Riverside Geyser

- See photocopies

Condition of Item(s) fair - labels - spiral binding holes

Item(s) Originally Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

1975 Superintendents Annual Report

Item(s) Now Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

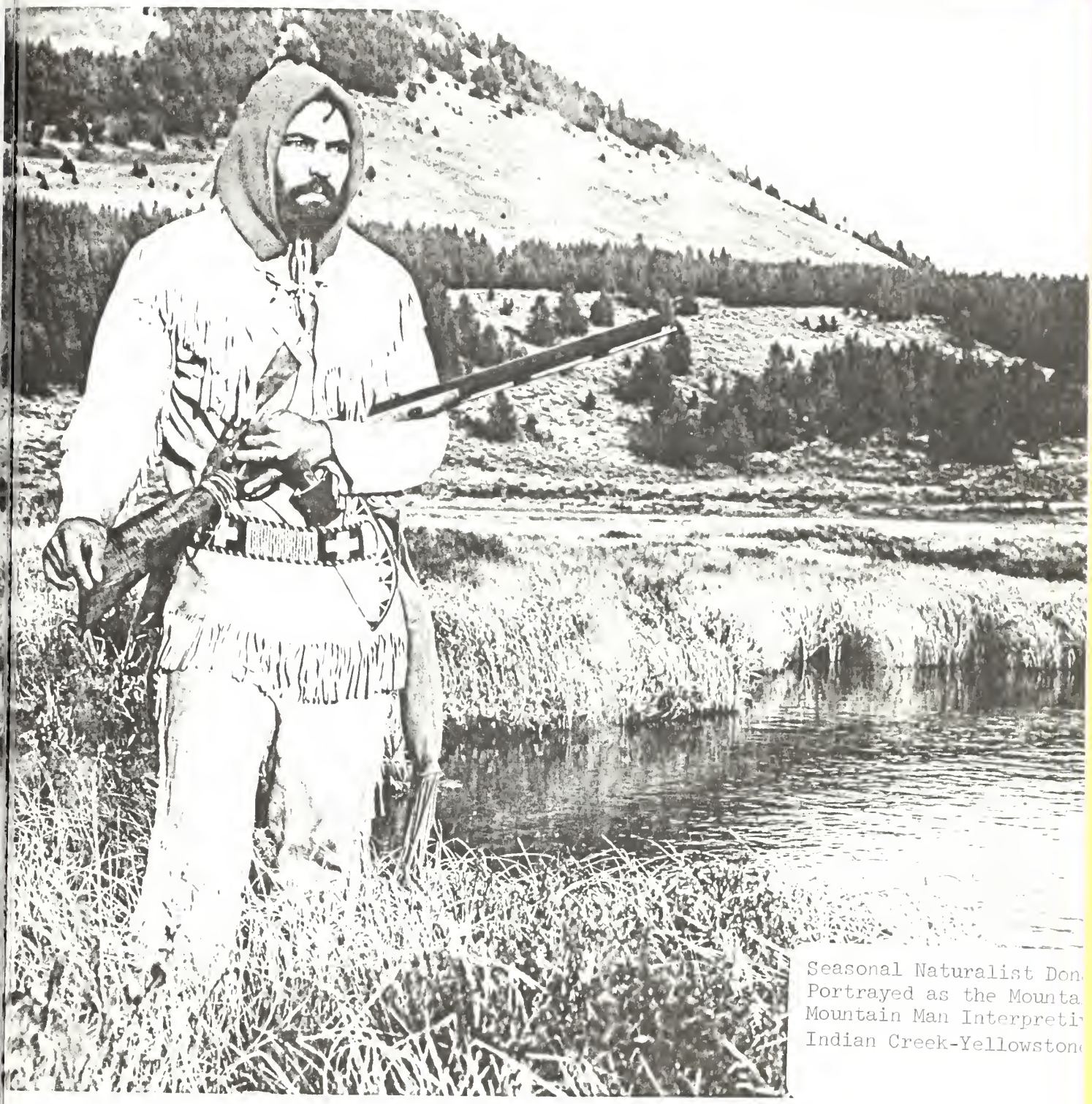
photo archives

Separated by (name, title, and office) A. Cherry

Separation Date: 7-30-05

Superintendent Jack K. Anderson
and Director Gary Everhardt at
Retirement Dinner for Jack Anderson
June 18, 1975

Top l. to r: Greg Lilly, Jeremy Greenstock, Bud Lilly, Bill Hupe, Bob Haraden, John Townsley, Vern Hennessy.
Front: Elaine Townsley, Lady Ramsbotham, Sir Peter Ramsbotham.
Shoshone Lake-YNP-October 13-14, 197[illegible]



Seasonal Naturalist Don
Portrayed as the Mounta
Mountain Man Interpreti
Indian Creek-Yellowston

ge to Inspiration Point Viewing
form - Yellowstone National Park
ed by June 30, 1975 Earthquake

Rock Slide - Virginia Cascades
Yellowstone National Park
Caused by June 30, 1975 earthquake

Riverside Geyser - Firehole River
Old Faithful Area

APPENDIX I

Special Achievement Awards

NAME	AMOUNT
Edwin Chamberlin	$250.00
Judith L. O'Neale	150.00
Larry C. Newell	200.00
Thomas A. Pittenger	250.00
Leo P. Michelcic	250.00
Vernon E. Hennesay	300.00
Linda A. Chapman	150.00
Norman H. Dodge	150.00
Harold W. Rendo	200.00

Superior Service Awards (Quality Increases)

Ted L. Weight	150.00
Virginia Rudolph	50.00

Reprinted from BioScience

A Comment on the History of the Northern Yellowstone Elk

Douglas B. Houston

Elk (*Cervus canadensis*) are the most abundant ungulate in Yellowstone National Park. Those wintering on the Yellowstone River drainage in and adjacent to the park have come to be known as the northern Yellowstone herd. The primary objective of Yellowstone as a natural area is to maintain the park ecosystem in as near pristine conditions as possible, with these elk as an integral part. The management of these animals has a long history of concern and controversy.

Many biologists are probably familiar with the recent history of these elk, which has included periodic large-scale experimental population reductions within the park. The combination of park reductions and hunting of herd segments outside the park reduced winter numbers from 12,000± to 5,000± between about 1955 and 1968. The research program since 1969 involves testing a series of hypotheses to determine if such reductions are indeed necessary within the park or if the Yellowstone ecosystem is intact enough that numbers within the park will be regulated naturally. Recreational hunting is permitted outside the park on other segments of the northern herd.

It is not my purpose to review the philosophy of the management of national parks, the rationale and research design behind the present program, or the results of recent work. These have been reviewed elsewhere (Cole[1,2], 1971, Houston[3], 1971, 1973, Meagher 1973). The purpose of this note is first to point out that some fundamental aspects of our interpretation of the history of the northern elk have changed and second to call attention to some far-reaching implications of this changed interpretation.

Yellowstone is fortunate to have a wealth of records available to reconstruct aspects of the history of the elk including human influences on numbers and distributions, for the past 100 to 140 years. In fact, the volume of mostly unpublished materials to be covered was so enormous that only recently were sufficient manpower and time available for the task. Now largely completed, this note is abstracted from the report, which contains the supporting historical records[4].

For the past half-century nearly every account of the population dynamics of the northern elk, every interpretation of habitat conditions, and many interpretations of the relations of elk with associated herbivores have been based upon one or more of the following premises: (a) the park area did not serve as historical winter range, (b) following establishment of the park the elk population erupted to 35,000 by the early 1900's, and (c) the population crashed to 10,000 to 12,000 between 1917 and 1920 attendant range deterioration is often suggested. My review of the historical data shows that these premises and interpretations were incorrect.

There are first person accounts to show that large numbers of elk wintered historically on the northern range. Reports to the contrary seem to have been based upon misinterpretation of one or two early comments. The reported population eruption seems to have resulted from three erroneous interpretations. First, gross estimates of numbers of elk summering in the entire park were misinterpreted as referring to just those wintering on the Yellowstone River. Summer herds are composed of animals from many discrete winter herds surrounding the Yellowstone Plateau. Second, the early definition of the "northern herd" included elk wintering on three to five other major river drainages in addition to those wintering on the Yellowstone River and its tributaries within and adjacent to the park (the current definition). Third, some early census attempts and calculations of increase rates were clearly faulty. Better organized censuses and evidence from first-person accounts indicate that an eruption did not occur. The evidence suggests that winter herds numbered mostly 12,000 to 15,000 which incidentally, yields winter densities comparable to many other herds in the Rocky Mountains. The reported population "crash" resulted from accepting as established fact the administrative *suggestion* of large scale winter mortality to explain discrepancies between two population estimates. There are abundant first-person accounts from independent sources to indicate that a population crash did not occur. This is but a brief summary of what proved to be an intriguing detective story.

Subsequent reports and publications built upon and reinforced a largely incorrect historical account of the northern Yellowstone elk in a manner analogous to that reported by Caughley

Douglas B. Houston is with Yellowstone National Park, Wyoming 82190.

This paper is a contribution from National Park Service Natural Sciences Project YELL N 29b.

[1] Cole, G. F. 1969. The elk of Grand Teton and southern Yellowstone national parks. Mimeographed Research Report. Yellowstone National Park, Wyoming. 192 pp.

[2] Cole, G. F. 1969. Elk and the Yellowstone ecosystem. Mimeographed Research Note. Yellowstone National Park, Wyoming. 14 pp.

[3] Houston, D. B. 1971. Research on ungulates in northern Yellowstone National Park. Symposium on Research in National Parks, American Association for the Advancement of Science, Washington, D.C., in press.

[4] Houston, D. B. 1974. The northern Yellowstone elk. Parts I and II: history and demography. Unpublished report. Mimeographed. Yellowstone National Park, Wyoming. 185 pp.

(1970) for the Kaibab deer of Arizona. These accounts were then used to support, in part, various management programs for the northern elk which have ranged from predator control and winter feeding to large-scale population reductions within the park. In turn, I have observed that the traditional "history" of the Yellowstone elk, often complete with graphic accounts of the population eruption and crash, has been (a) used (sometimes with the Kaibab deer story) to buttress the need for ungulate population reductions in other national parks of the world, (b) used to caution against establishment of new national parks, (c) used as the rationale to support the "need" for sport hunting of ungulates, and finally (d) taught to students as examples of ungulate habitat relations, the role of predation, and so on.

This is not to say that population reductions of the northern herd in Yellowstone Park will be unnecessary in the future, but simply that any future programs will be carried out from a different historical perspective. Nor do I wish to imply that periodic reductions of ungulates are unnecessary in other parks of the world which are not complete ecological units, but the traditional "history" of the northern Yellowstone elk should not be used to buttress such programs. Furthermore, there are legitimate biological and sociological rationales for sport hunting. To use the traditional "history" of the northern elk as support only weakens the case for continued recreational hunting.

The objective of maintaining pristine ecosystems, with modern man restricted to nonconsumptive uses, can only be partially met for the northern elk because the park does not contain the complete ecological unit for one segment of the population. We have not yet determined if elk wintering in the park will be regulated naturally, that is, density-dependent homeostatic mechanisms will result in the equation: natality + immigration = mortality + emigration. We have not determined if a recreational hunting program to manage those elk that winter outside the park is workable. Evaluation of these hypotheses is a complex undertaking which involves studies of the demography and behavior of elk, of relations among faunal species, of vegetation and plant succession, and of fire history and climate. Demography will change as the elk population increases from levels imposed by past herd reductions. The dynamics of herd segments within the park will be different from those outside the park, which are more frequently influenced by human predation (recreational hunting). These differences will affect fecundity, age structures, and mortality patterns.

All aspects of elk mortality in relation to the objectives of the park have required reappraisal. Records show that substantial mortality has occurred during periodic severe winters since modern man was first present as a witness. This occurred with varying levels of predation by native carnivores and modern man; it appears to be characteristic of ungulate populations in areas with large annual fluctuations in the absolute abundance and relative availability of forage. This mortality is not a priori evidence of overpopulation, that is, ungulate densities which cause unnatural retrogressive plant succession. Substantial mortality of elk during occasional severe winters is expected to recur. Interpretations that this mortality represents a loss is inappropriate within the park where dead elk become necessary food supplies for endemic carnivores.

REFERENCES

Caughley, G. 1970. Eruption of ungulate populations, with emphasis on Himalayan thar in New Zealand. *Ecology* 51: 53-72.

Cole, G. F. 1971. An ecological rationale for the natural or artificial regulation of native ungulates in parks. *Trans. N. Am. Wildl. Nat. Resour. Conf.* 36: 417-425.

Houston, D. B. 1971. Ecosystems of national parks. *Science* 172: 648-651.

———. 1973. Wildfires in northern Yellowstone National Park. *Ecology* 54: 1111-1117.

Meagher, M. M. 1973. The bison of Yellowstone National Park. *Nat. Park Serv. Sci. Monogr. Ser. No. 1.* 161 pp.

INFORMATION PAPER No. 26
Yellowstone National Park
National Park Service
U.S. Department of the Interior

Glen F. Cole
Supv. Research Biologist
May 1975

NATURAL VS. MAN-CAUSED DEATHS OF WILD ANIMALS IN NATIONAL PARKS

> For everything there is a season, . . . a time
> to be born and a time to die.
>
> --- Ecclesiastes 3; 1-2

All populations have birth and death rates. Population numbers remain stable when deaths equal births. Characteristically, more young are born each year than are needed to maintain stable numbers.

Deaths due to natural causes are highly age-specific and are mostly the oldest adults and weakest young in a population. The strongest young and middle-age adults consistently survive conditions that cause the weakest young and oldest adults to die. The primary cause of most adult deaths is physiological old age or senescence. Deaths of young are mainly due to competition with adults for space or food, and the effects of periodic severe weather. Deaths finally occur from secondary causes. Carnivores regularly die from a lack of food (starvation). Herbivores may finally die from undernutrition, from illnesses, or by being too weak to escape from predators. Diagnosing these final causes of death is difficult and usually it is only possible to state that an animal died from natural causes. Herbivores rarely die from an absence of food, and attributing their deaths to starvation is usually an incorrect diagnosis.

No living creature escapes death, but it is possible to have man-caused deaths occur in advance of deaths that would otherwise occur from natural causes. A complete substitution of man-caused for natural deaths is rarely attainable because the density-independent effects of severe weather continue to cause the deaths of both young and old animals.

Whether a natural or man-caused death is "best" for wild animals can be a matter of personal feeling. However, a more definitive basis exists for assessing whether natural or man-caused deaths of wildlife are more appropriate within national parks such as Yellowstone. Here it is necessary to consider first the purpose of a national park, and second, the ecological consequences of substituting man-caused for natural deaths in parks.

The purpose of Yellowstone Park is to preserve nature and provide for the public enjoyment of same in ways that retain natural conditions. Here nature is a collective term for native plant and animal life and natural environments as an integrated whole, or ecosystem. Natural conditions can be defined as those where modern man is not changing the flow of energy or cycling of nutrients within an ecosystem; or altering the distributions, behavior, or population dynamics of wild animals.

About 1% of the park's 2.2 million acres is taken up by roads, facilities for visitors, and administrative units. The remaining 99% is undeveloped wild land. With the possible exception of the gray wolf, representative populations of all native wildlife species occur as yearlong residents. The park additionally serves as summer range for elk and mule deer that spend the winter and are hunted on adjoining state lands. Because man's influences on the park's resident wildlife have been greatly reduced in recent years it is possible to conclude that Yellowstone Park is presently one of the most complete natural ecosystems remaining in the United States.

Figure 1 shows an ecological system where nutrients cycle through plants, wild animals, and an environment, and deaths only occur from natural causes. Such systems become unnatural to the extent that modern man adds or takes away nutrients, or manipulates the deaths of animals or plants. This diagram also shows that death is necessary to recycle nutrients, transfer nutrients from herbivores to carnivores, and more fundamentally, to sustain and renew life. Obviously the concept that something is wasted if it is not eaten or used by man is inappropriate in a natural ecosystem.

Figure 2 illustrates the relative proportions of plants, herbivores, and carnivores within natural ecosystems. The system becomes unnatural if man reduces plants that sustain wild herbivores; reduces the numbers of herbivores that sustain native predators and scavengers; or directly reduces carnivores. Unnatural conditions also occur if supplemental food is provided to wild animals. This practice changes the natural distributions and behavior of fed species, the way their populations are regulated (artificially high densities increase deaths from competition and other social interactions), and increases parasite loads and the incidence of communicable diseases.

Additionally, substituting man-caused for natural deaths in parks changes the behavior of an exploited species to the extent that they become more wary and less visible to park visitors and may not use all available space or food. There are also indications that reducing natural deaths of less fit young from competition can cause a population of wild animals to be less adapted to its environment than it would otherwise be.

In summary, individual animals die, but populations persist over time because births replace deaths. Deaths from natural causes are characteristic of natural ecological systems. Substituting man-caused for natural deaths in parks changes the behavior of exploited species, changes the relationships between herbivores and carnivores, and more fundamentally changes natural ecosystems to man-modified systems. Such changes are inconsistent with the fundamental reasons for establishing national parks. Substitutions of man-caused for natural deaths would be consistent with an objective of managing wild animal populations to provide recreational hunting and food for humans, and this is the usual objective in areas other than national parks.

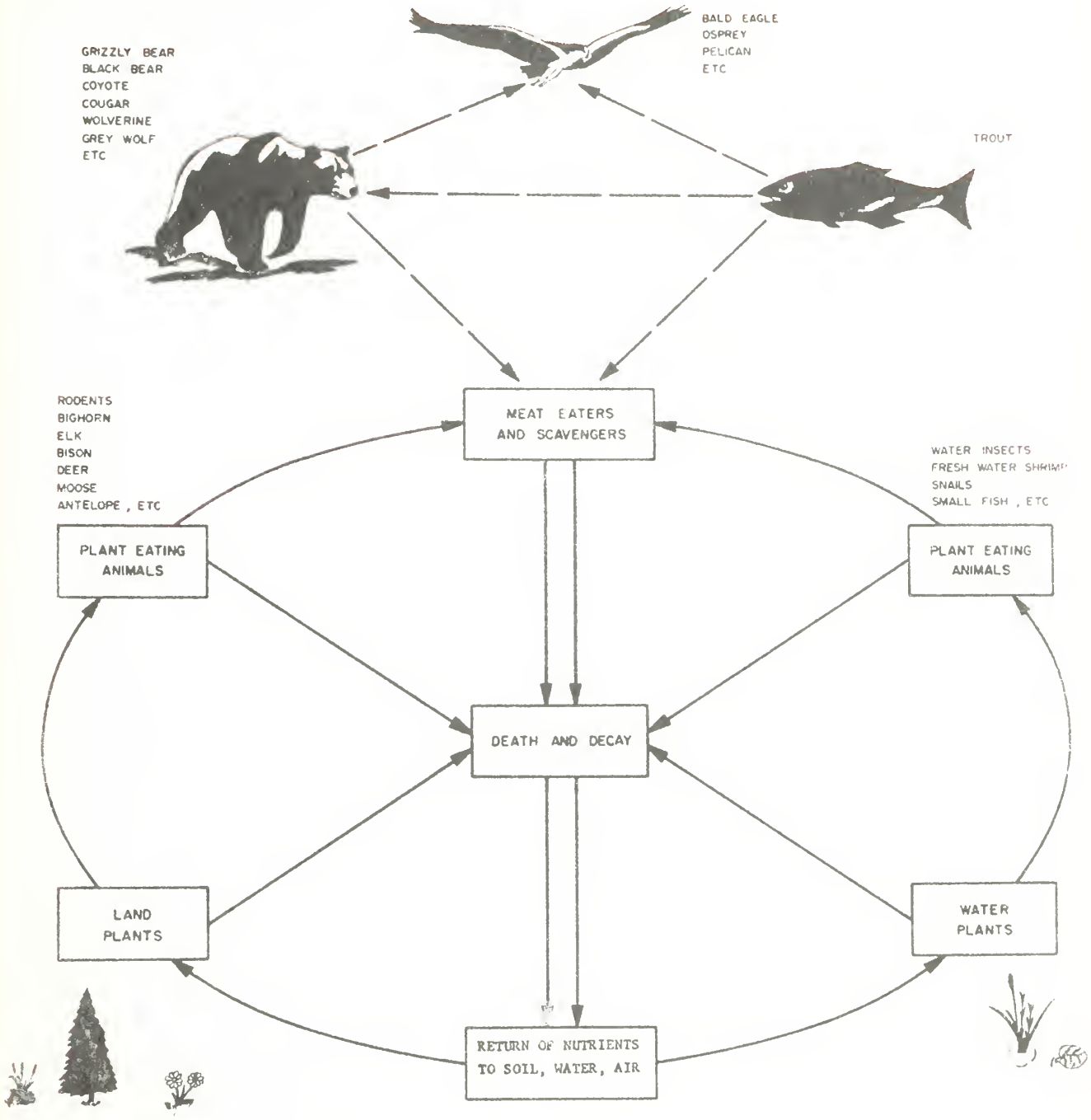


Figure 1 — YELLOWSTONE ECOSYSTEM

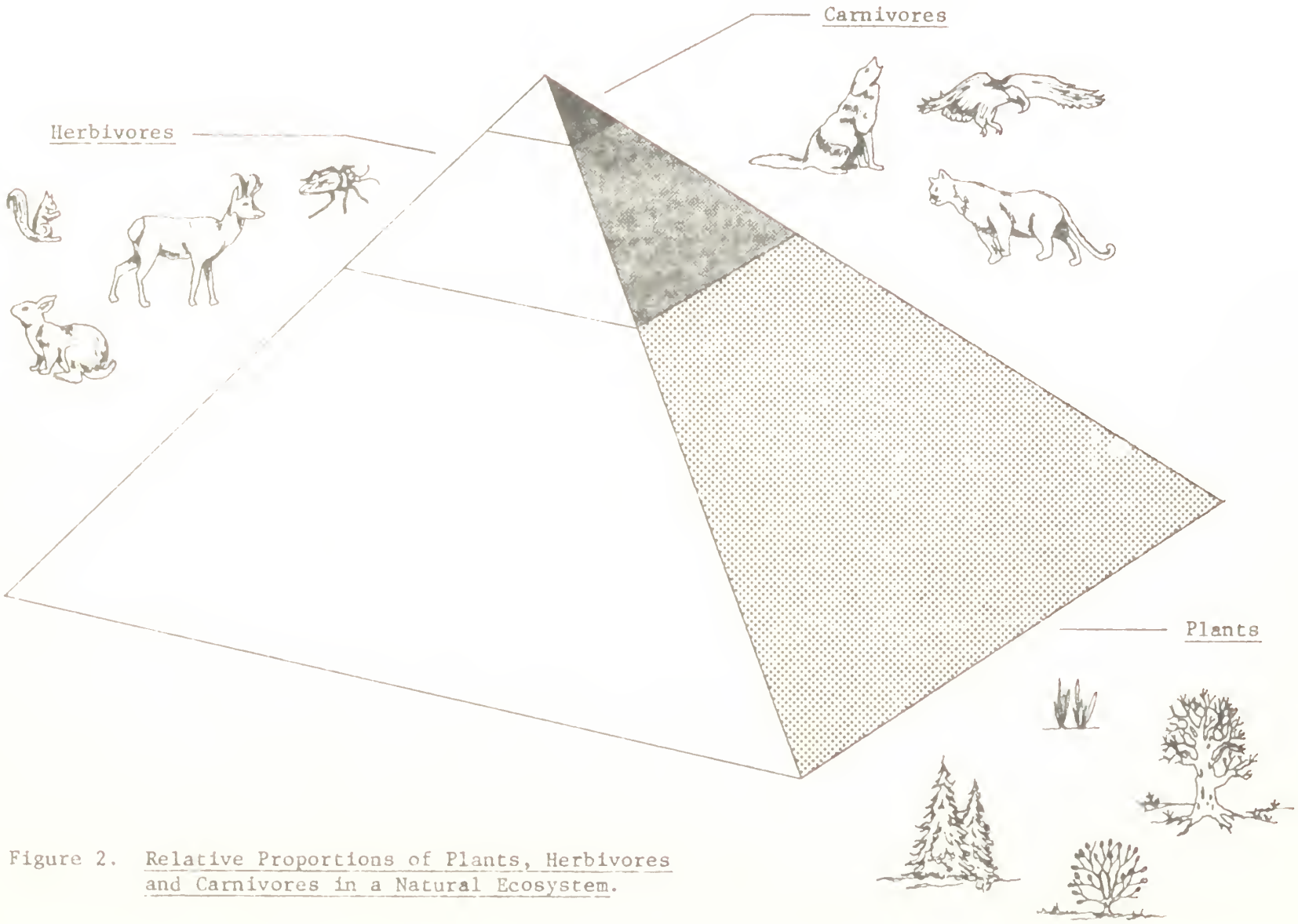


Figure 2. Relative Proportions of Plants, Herbivores and Carnivores in a Natural Ecosystem.

Recommended Reading

Buffington, J. D. 1971. Predation, competition, and Pleistocene megafauna extinction. BioScience 21(4): 167-170.

Caughley, G. 1966. Mortality patterns in mammals. Ecology 47: 906-918.

Cole, G. F. 1971. An ecological rationale for the natural or artificial regulation of native ungulates in parks. Trans. North Amer. Wildlife Conf. 36: 417-425.

_____. 1972. Grizzly bear-elk relationships in Yellowstone National Park. J. Wildl. Mgmt. 36(2): 557-561.

_____. 1974. Population regulation in relation to K. Montana Chapter of Wildlife Society. 17 pp. (mimeo)

Geist, V. 1970. A behavioral approach to the management of wild ungulates. 11th Symposium of British Ecol. Soc., U. of East Anglia, Norwich. 7-9 July. Blackwell Sc. Publ., Oxford, London, Edinburgh, Melborne.

Horn, H. S. 1968. Regulation of animal numbers: a model counter-example. Ecology 49: 776-778.

Houston, D. B. 1971. Ecosystems of national parks. Science 172: 648-651.

_____. 1974. History of the northern Yellowstone elk. Parts I and II: History and Demography. Res. Rpt., YELL-N-29b, Yellowstone Nat. Park. 99 pp. + appendix.

McLaren, I. A. (ed.) 1971. Natural regulation of animal populations. Atherton Press, New York. 188 pp.

Meagher, Mary. 1971. Winter weather as a population-regulating influence on free-ranging bison in Yellowstone National Park. AAAS Symposium on Research in National Parks. 17 pp. (mimeo)

Pimentel, D. 1968. Population regulation and genetic feedback. Science 159: 1432-1437.

Tanner, J. T. 1966. Effects of population density on growth rates of animal populations. Ecology 47: 734-740.

Watson, Adam and Robert Moss. 1969. Dominance, spacing behavior, and aggression in relation to population limitation in vertebrates. pp. 167-218 in Animal populations in relation to their food resources, a symposium of the British Ecological Society, March 1969. Adam Watson (ed.) 1970. Blackwell Scientific Publications, Oxford and Edinburgh. 477 pp.

Wilson, E. O. and W. H. Bossert. 1971. A primer of population biology. Sinauer Assoc., Inc., Sanford, Conn. 192 pp.

INFORMATION PAPER No. 28
Yellowstone National Park
National Park Service
U.S. Department of the Interior

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Supv. Research Biologist
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NATURE AND MAN IN YELLOWSTONE NATIONAL PARK

Yellowstone National Park is administered as a natural area. Such areas are to preserve natural environments and native biota as an integrated whole (i.e. ecosystem) and to provide for the public enjoyment of same in ways that maintain natural conditions. Natural conditions exist to the extent that man does not change things from what they would otherwise be. Obviously changes will occur from natural processes and these need to be distinguished from those due to man. Management in natural areas is restricted to protecting against, removing, or compensating for the activities of man that cause departures from natural conditions.

The retreat of glaciers about 30,000 years ago permitted vegetation and wild animals to occupy the region that became Yellowstone Park. Primitive man arrived about 10,000 years before present and subsisted in small numbers until about 100 years ago when the park was established. All other native species are still present. With the possible exception of the Rocky Mountain wolf, representative populations of all native wild animals are yearlong residents. Additional numbers of elk and mule deer use the park in summer and make annual migrations from and back to wintering areas in Wyoming, Montana, and Idaho.

The present effects of modern man on the park environment and its resident biota are diagrammed on Fig. 1. As shown, less than 1% of the park's 2.2 million acres is permanently altered as roads or facilities that presently accommodate over 2 million visitors each year. The disposal of effluents and wastes from existing facilities does not appear to be causing departures from natural conditions in the remainder of the park.

The remainder of the park represents an ecological system where natural conditions are to be maintained or restored. As indicated on Fig. 1, the extent to which man suppresses naturally-caused fires is causing this system to be different from what it would otherwise be. Departures from natural conditions are greatest in the park's grassland areas which burned on the average every 20-25 years, and least in forest habitats that burned every 100-200 years.

Other measurable departures from natural conditions occur from man's past and present exploitation of native fishes. Less easily corrected departures occur in some portions of the park from past introductions of exotic fishes and plants. Minor departures also persist from eras when native predators and herbivores were artificially controlled, but these are being erased with the passage of time.

Overall, Yellowstone National Park appears to be sufficiently large and ecologically intact to make the objective of preserving a natural ecosystem of mountain environments and native biota obtainable. The objective of providing for the public enjoyment of same in ways that maintain natural

conditions also seems feasible, but only with limits on the numbers of visitors and the kinds of activities that can be accommodated. Most present departures from natural conditions can be corrected by not interfering with natural processes, by the appropriate regulation of humans, or the passage of time. Obviously, the preservation of natural ecological systems requires a "let it be" philosophy. Human judgments of what is good or bad in such systems can only be appropriate within the context of what is or is not natural.

Man's effects on wild animals that are not yearlong residents of the park present some conflicts with the attempts to restore and maintain a natural ecosystem inside the park. A viable population of wolves may only be restored if this species is also adequately protected on certain adjoining state lands. Mountain lions and grizzly bears will also need to be protected on some adjacent lands to occur in natural densities within the border region of the park. The hunting of elk and mule deer on adjacent lands does not cause serious conflicts, unless such activities restrict migrations from the park.

Recommended Reading

Anonymous. 1973. Yellowstone fishing. Information Paper, Yellowstone Nat. Park, 1 p. (mimeo)

Dale, G. F. 1971. An ecological rationale for the natural or artificial regulation of native ungulates in parks. Trans. North Amer. Wildl. Conf. 36: 417-425.

_____. 1975. Population regulation and the consequences of artificially feeding wild animals. Information Paper, Yellowstone Nat. Park. 2 p. (mimeo)

_____. 1975. Natural vs. man-caused deaths of wild animals in national parks. Information Paper, Yellowstone Nat. Park. 3 p. + figs. (mimeo)

Despain, D. G. 1972. Fire as an ecological force in Yellowstone ecosystems. Information Paper, Yellowstone Nat. Park. 3 p. (mimeo)

Houston, D. B. 1971. Ecosystems of national parks. Science. 172: 648-651.

_____. 1974. History of the northern Yellowstone elk. Parts I and II: history and demography. Res. Rpt., YELL-N-29b, Yellowstone Nat. Park. 99 p. + appendix.

Meagher, Mary. 1974. Yellowstone bison, a unique heritage. Nat. Parks and Conserv. Mag., (May) p. 9-14.

INFORMATION PAPER No. 27
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POPULATION REGULATION AND THE CONSEQUENCES OF ARTIFICIALLY FEEDING WILD ANIMALS

Populations of wild animals regulate their own size by the processes of competition and reproduction, as diagrammed on Fig. 1. Competition is greatest between animals of the same species, intensifies as population size increases, and causes deaths to equal births when populations are as high as they can be in a particular environment. Births of young routinely replace deaths due to competition and other influences, such as periodic harsh weather. The size of populations fluctuate because deaths and births usually occur in different seasons, and because more than one year's reproduction may be required to fully compensate for the effects of harsh weather.

Populations regularly produce more young than are needed to replace deaths due to old age or than can be supported by an environment. Competition between population numbers over space and food predispose the weakest young and oldest adults to die from a variety of secondary causes, such as under-nutrition, disease, or predation. Competition among males over females or a breeding territory similarly predispose the oldest males to die from secondary causes.

Harsh weather also causes age-specific deaths of the weakest young and oldest adults, either by its effects alone or by concentrating animals on smaller areas where competition for space and food is intensified. The strongest young and adults of prime breeding age survive the effects of competition and periodic harsh weather that regularly remove less fit young and old animals from a population.

Wild animals have social systems where individuals and groups use different portions of an environment according to their sex, age, and social rank. Such systems are the results of long periods of natural selection for what works best in the wild. The practice of artificially feeding populations of wild animals collapses these social systems by concentrating (crowding) animals that would otherwise be separated or occur in smaller groups. Such crowding increases competition for space and food to the extent that both the production and survival of young and the mean size of populations are reduced from what they would otherwise be. An additional effect of crowding is that it increases the incidence of communicable diseases. These various relationships are recognized by livestock raisers who feed mature males, females, and weaned young separately and in the smallest groups possible over winter periods.

Contrary to commonly held beliefs, artificial feeding does not reduce death rates in wild animal populations. This is because feeding intensifies competition between weak and strong animals for space and food above what it would otherwise be. Thus feeding adds an additional regulatory effect on a wild animal population. As shown by domestic animals, some species that were originally wild eventually adapt to crowding and being artificially fed, but this results in a loss of adaptions for living in the wild and a continuous need to be fed and treated to control diseases.

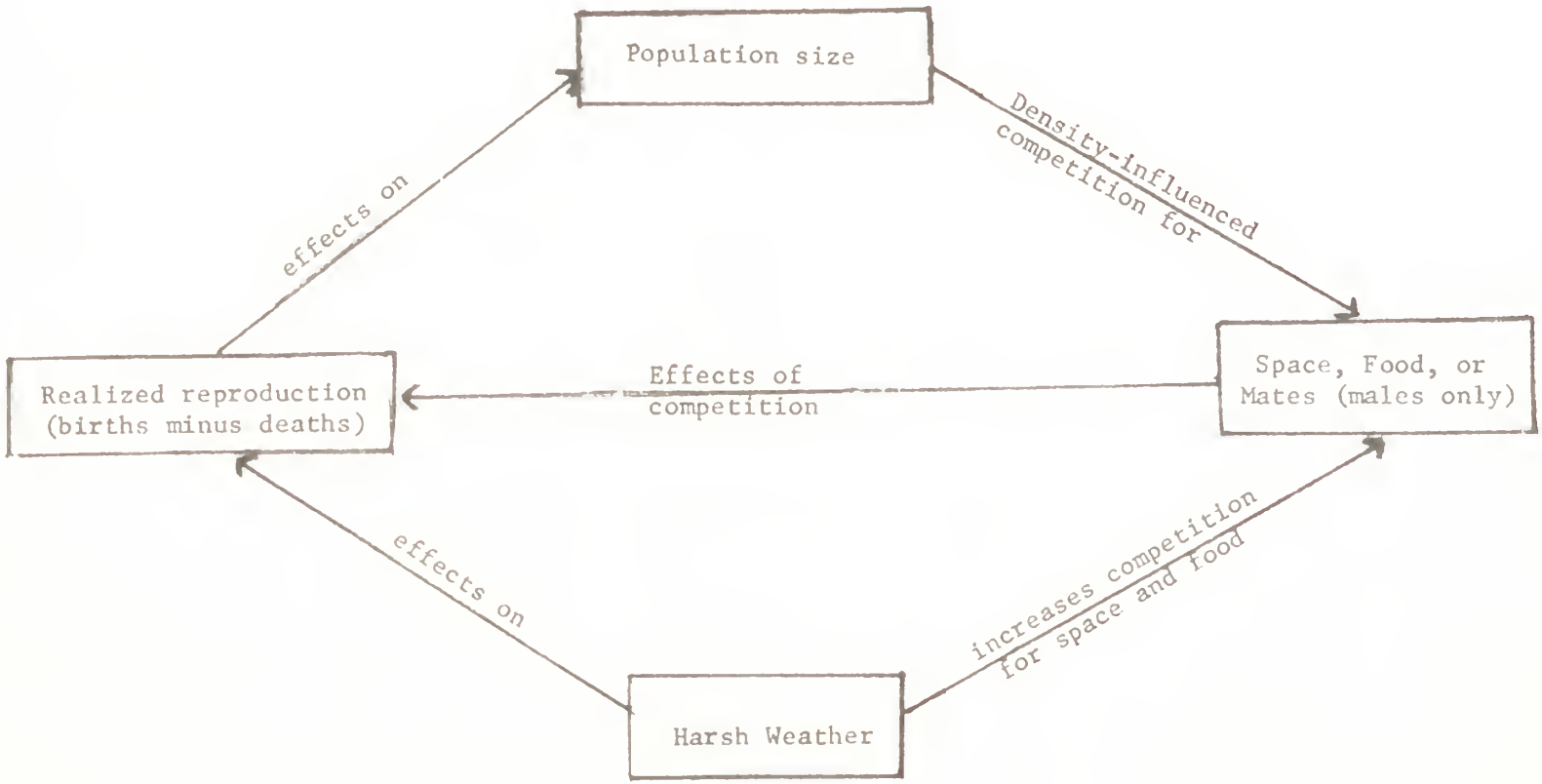

Fig. 1. Regulation of population size by the natural processes of competition and reproduction.

MANAGEMENT INVOLVING GRIZZLY BEARS IN YELLOWSTONE NATIONAL PARK, 1970-74

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Contributed Paper

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ABSTRACT

Management to maintain a population of grizzly bears (*Ursus arctos*) under natural conditions and reduce grizzly injuries to humans in Yellowstone National Park is evaluated by testing hypotheses that could be rejected by inconsistent data. The elimination of unnatural sources of food (garbage or improperly stored camp groceries) and changes in bear control procedures from 1970 to 1974 had the following results: The numbers of grizzly injuries to humans in the park's developed areas were significantly reduced from previous levels. A more natural grizzly population was restored, as evidenced by spaced distributions on natural foods in summer and a reduced need to control bears to protect humans. Yearly removals of bears that persisted in seeking food in park campgrounds or other developed areas, as well as other sources of mortality, temporarily lowered population numbers and emigration rates. Removals did not appear to be of sufficient magnitude to prevent the park grizzly population from establishing its numbers at natural carrying-capacity levels.

INTRODUCTION

A management program to reduce grizzly bear injuries to humans and maintain this species under natural conditions has been carried out in Yellowstone National Park since 1970. This is the fifth in a series of papers that document the results of this program (Cole 1970a, 1971, 1973, 1974a). The program was proposed to the Director of the National Park Service by a Natural Sciences Advisory Committee[1] after a review of park records and other information on grizzly bears. Much of this reviewed material has been published (Cole 1970b, Martinka 1971, Craighead and Craighead 1971).

Briefly, park records showed 60 persons had been injured by grizzlies in developed areas during the 40 years before 1970. Developed areas have overnight and/or day-use facilities for park visitors, are accessible by auto, and comprise less than 1% of Yellowstone's 2.2 million acres. Only three persons had been injured by grizzlies in the wild during this same period. Comparatively few injuries occurred from 1930 through 1962, averaging less than one per year and less than one for each million visitors. Injuries occurred more frequently from 1963 through 1969, averaging over four per year and one for each 500 thousand visitors.

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[1] "A Bear Management Policy and Program for Yellowstone National Park," report to the Director by the Natural Sciences Advisory Committee, 1969, 7 p., typewritten.

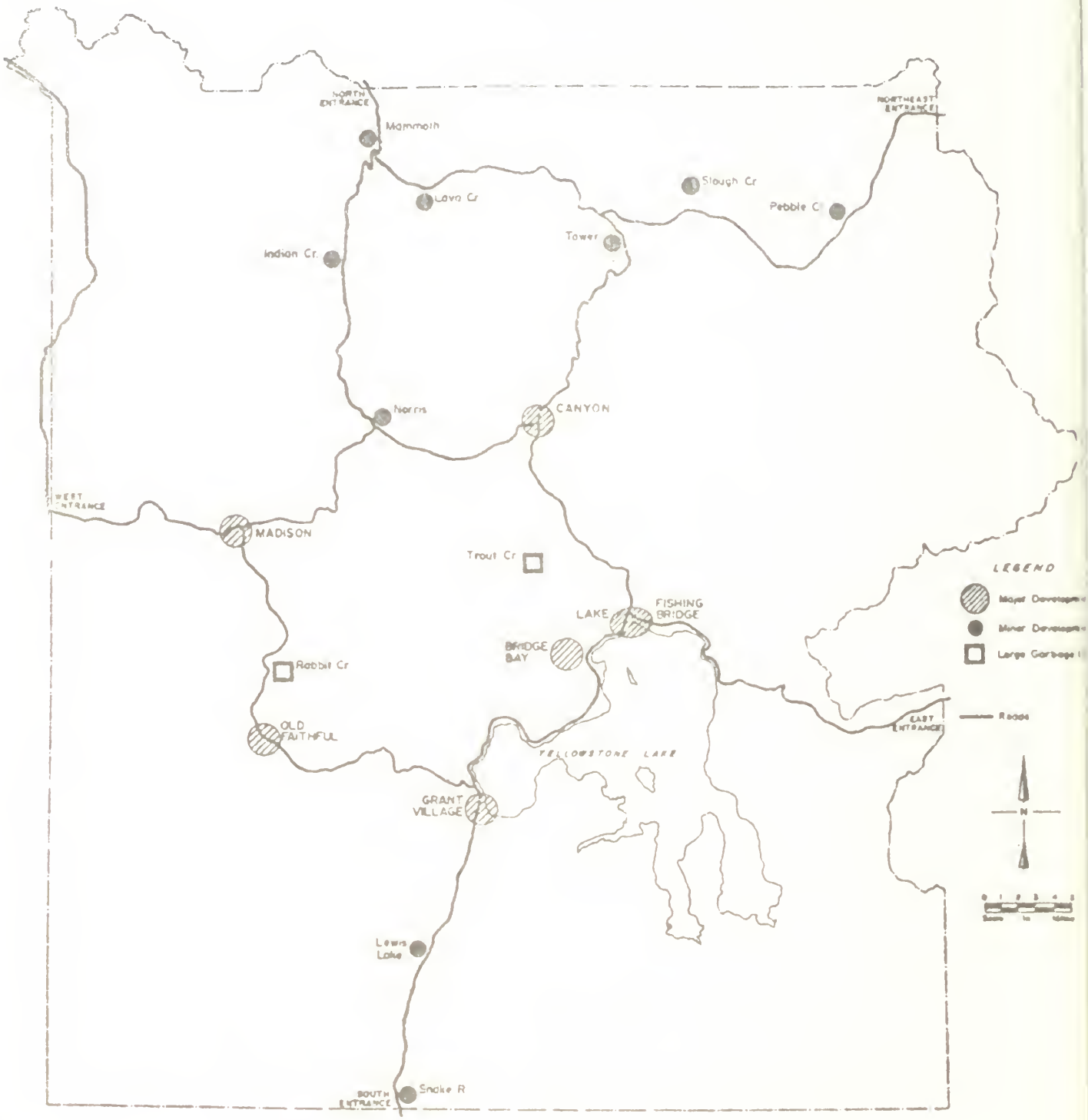


Fig. 1. Location of park developed areas and garbage disposal sites.

The reviewed information also showed that sources of unnatural food changed the habits and behavior of a substantial portion of the park's grizzly population, were the primary cause of most injuries to humans, and maintained a need to control (capture, transplant, or destroy) bears to protect humans. Briefly, garbage at open-pit dumps and unfenced incinerator sites concentrated large numbers of socially interacting grizzlies close (8 miles or less) to certain developed areas during the summer. As an apparent consequence of competition for space and food at dump and incinerator sites, some bears also visited developed areas to use garbage in cans without bearproof lids and improperly stored camp groceries. These bears became increasingly habituated to humans and dangerous.

Seven garbage dumps were closed between 1936 and 1968. Two dumps were still being used by grizzlies during 1968 and 1969. Bearproof garbage cans were progressively installed in all developed areas between 1965 and 1969, but portions of two areas that had concessioner-owned facilities did not have such cans until 1970. Figure 1 shows the locations of places mentioned later.

MANAGEMENT PROGRAM

Initial Assumptions

The following was assumed in designing the management program: The desired number of grizzlies within Yellowstone National Park was the number that would occur under natural conditions (i.e., without

human alterations of bear habits, behavior, or population dynamics). Management that eliminated sources of unnatural food and selectively removed incorrigible animals from the population (bears that could not be discouraged from using developed areas) would allow young bears with natural habits or behavior to replace incorrigible animals and eventually reduce the need to control bears in developed areas. The number of years it took to eliminate sources of unnatural food would determine the number of generations of young that either had their habits and behavior altered by such food or were raised under natural conditions. The park's population of 250-300 grizzlies could compensate for anticipated removals of incorrigible animals.

Procedures

The management program was designed as a series of scheduled and contingency procedures (Appendix I). Briefly, these provided for closing the two remaining garbage dumps in 1970 and 1971, or over a longer period of time if necessary; enclosing incinerators within fences; completing installations of bearproof garbage cans; assigning personnel to patrol campgrounds and control bears; changing control procedures so as to reduce risk to visitors; regulating or restricting humans so as to reduce the need to control bears; and finally, monitoring and evaluating the results of the management program.

The management program followed the recommendations of the Natural Sciences Advisory Committee with the exception that the contingency of

using the Trout Creek dump beyond its scheduled closing date was an alternative to the committee's recommendation that bears be fed park unguiates as a substitute for garbage. The scheduled procedures were followed as outlined, except that fenced sanitary landfills were employed as an alternative to hauling garbage out of the park, and the adjacent states were unable to accept grizzlies for reestablishing populations elsewhere. The contingency of using the Trout Creek dump beyond its scheduled closure was not used, but those involving manipulations of campground opening or closing dates and other restrictions on camping were routinely applied to reduce risks to visitors and the need to control bears. Additionally, the system for monitoring sightings of grizzlies throughout the park was used to regulate hiking, camping, and party sizes in backcountry areas; or to close areas with high densities of bears or female grizzlies with young.

EVALUATION PROCEDURES

Hypotheses

To evaluate the results of management in the most objective manner possible, the general objectives of reducing injuries and maintaining grizzlies under natural conditions were more specifically stated as hypotheses that could be rejected by inconsistent data (Poore 1962), or by appropriate statistical tests. Because the different procedures that eliminated unnatural foods and changed bear control practices (discussed later) were applied simultaneously, the hypotheses were

stated as follows: The management to eliminate unnatural food sources and the bear control procedures applied in the 1970s will:

1. Reduce the number of grizzly injuries to humans in park developed areas from 1963-69 levels (9.4 average; 2-8 range).
2. Restore a more natural grizzly population than existed in the 1960s, as evidenced by scattered distributions in summer, fewer bears using developed areas, and progressive reductions in the numbers of bears being controlled.
3. Not prevent the grizzly population from maintaining or reestablishing its numbers at natural carrying-capacity levels.

Collection of Data

Sightings of grizzlies and incidents of bear injuries to humans or bears being controlled to protect humans were reported to the park's research office on a daily basis. One control action was recorded each time a bear was captured for transplanting, shipped to a zoo, or destroyed. Destroyed animals were salvaged as scientific specimens for educational institutions. The information obtained from sightings is illustrated by a sample report form (Fig. 2). Most sightings of grizzlies were by park employees, but those of other persons were accepted if their descriptions of a bear(s) permitted a judgment as to species.

From 1972-74, all sightings of female grizzlies with cubs or yearlings by research personnel and park employees that were considered

BEAR SIGHTING AND/OR IDENTIFICATION REPORT

I. Sighted by_____ Address_____

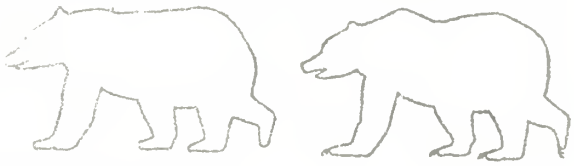
II. Sighting date_____ Time_____

III. Sighting location_____
(check one) Within development[1/]____ Along road____ In the wild____

IV. Description of bear(s):

A. Species:

	As reported	As verified by[2/]
Grizzly	☐	☐
Black	☐	☐
Unknown	☐	☐



B. Number of bears seen by size and coat color:
(also describe any identifying eartags or markers)

Predominant coat color: Weight in pounds[3/]

	10-50	50-100	100-200	200-400	Over 400
1 - black					
2 - reddish-brown					
3 - gray					
4 - dark brown (chocolate)					
5 - light brown (tan)					
6 - blonde (white-yellow)					
7 -					

C. Diagram coat color pattern of female/young groups only, using colors 1 to 7 above.

Female Young

D. Activities of bear(s): Preying on_____ Scavenging on_____
Digging____ Grazing____ Other_____
See Case Incident Record No._____[4/]

V. Report filled out by_____
at (location)_____ on (date/time)_____
Notified Com. Center (date/time)_____
Rec'd. in Com. Center by_____ (date/time)_____
Notified (date/time):
Subdist. Ofc._____ Biologists Ofc._____
Dist. Ofc._____ Griz.Bear Team_____

1/ Overnite or day-use facilities for people, accessible by vehicle.

2/ Corrected where description by observer is not adequate to identify bear species, or indicates a different species from that reported.

3/ Cubs-of-year are usually less than 1/4 of female size, or 10-50 lbs;
Yearlings, 1/4-1/2 of female size, or 50-100 lbs.
2-year-olds, 1/2-3/4 of female size, or 100-200 lbs.
Small adult bears are 100-200 lbs; medium adults, 200-400 lbs; large adults, 400+ lbs.

4/ Refer to Case Incident Record No. if bear is involved in control action or other incidents.

Fig. 2--Form for reporting grizzly sightings.

qualified observers were tabulated separately. I examined these and attempted to distinguish different family groups by comparing the locations and dates of sightings, the relative sizes and different numbers of young in groups, the presence or absence of marked individuals, and the combinations of similar and different coat colors in groups. This method of distinguishing different groups was refined during 1973 and 1974 by comparing color photographs of family groups that were taken by Knight et al. (1975). A darkening of coat colors, as described by Pearson (1975), occurred during the late summer.

I used the counts of different family groups, the mean size of cub litters, and life history features (age of sexual maturity, mean interval between production of cubs, ratio of adult males to adult females) as described by Cole (1974a) to estimate the size of the grizzly population. Zinino and Herrero (1972) used a similar method to estimate bear numbers.

Additional data were collected on the seasonal distributions and food habits of grizzlies under natural conditions (Houston 1971, Cole 1973, Knight et al. 1975, Mealey ms) and bear-human relationships in backcountry areas (Chester ms). Independent studies to estimate grizzly numbers within the park and an adjacent 3,600 mi^2 area were also carried out by Knight et al. (1975).

MANAGEMENT RESULTS

Injuries to Humans

Park records show that 68 persons have been injured by grizzlies during the 45 years between 1930 and 1974. Nineteen of these were attributed to grizzlies by circumstantial evidence. Fifty were minor to the extent that they required only first aid, sutures, or lesser treatment. The other 18 entailed overnight or longer periods of hospitalization. Sixty-three, or 93%, of the total occurred in developed areas, and were caused by bears that were attracted to such areas by unnatural foods. Five, or 7%, of the total injuries occurred when persons hiking in backcountry areas approached too close to female grizzlies with young. Tabulations of injuries for a 1959-70 period by Craighead and Craighead (1971) are 18 less than those in park files for this same period (Cole 1970b).

Table 1 shows the numbers of injuries by decades from 1930 through 1969, and each year since 1970. No consistent relationship is shown with the numbers of park visitors, which progressively increased from an average of about 0.3 million persons per year in the 1930s to over 2 million per year in the 1970s. The comparatively low numbers of injuries during the 1950s were associated with control procedures similar to those used in the 1970s (Appendix 1).

The 1970-74 mean of 0.6 injuries per year in developed areas was significantly different ($P = 0.05$) from the 1963-69 mean of 4.4 injuries

Table 1.—Numbers of injuries to humans from grizzly bears by periods and years, Yellowstone National Park, 1930-74.

Years	No. grizzly-caused injuries per year[a]		No. of visitors per injury
	Developed area	Backcountry	
1930's	0.6 (0-3)	0	800,000
1940's	1.2 (0-7)	0	600,000
1950's	0.6 (0-2)	0	2,700,000
1960's	3.6 (1-8)	0.8 (0-2)	500,000
1970	2	1	700,000
1971	0	0	0
1972	1	1	1,000,000
1973	0	0	0
1974	0	0	0

[a] Averages of known and probable injuries due to grizzlies by decades from Cole (1970b). The one injury in a developed area in 1972 was also a probable case.

per year by the Sum Test (Wilcoxan and Wilcox 1964). The absence of injuries in 1971 was the first such occurrence in 15 years.

Injuries in backcountry areas between 1970 and 1974 remained low in number, despite progressive yearly increases of up to 400% in the numbers of hikers and campers using such areas. Some injuries were probably prevented by using monitored sightings of grizzlies to regulate backcountry hiking and camping.

Fatalities

The third known fatality from a grizzly in the park's history occurred in June of 1972. This occurred when a man returned to an illegally established camp at night and approached to within about 50 feet of a grizzly that was apparently feeding on food or garbage that had been left on the ground. The other fatalities occurred in 1907 when a man was attacked by a female grizzly after he had prodded her cub with an umbrella; and in 1916, when a man attempted to chase a grizzly away from a wagon loaded with food.

Grizzly Distributions

The system for monitoring sightings of grizzlies in developed areas and in the wild was established in 1968 (Table 2). Only the 1970-74 sightings in developed areas were obtained under comparable conditions. These indicate that the number of daily visits to developed areas by grizzlies progressively declined. As reported in previous papers (Cole 1969, 1973, 1974a), differences in natural food conditions between

Table 2.--Yearly totals of the numbers of grizzly bears observed on a daily basis in developed areas and in the wild within Yellowstone National Park, 1968-74.

Locations:	1968	1969	1970	1971	1972	1973	1974
No. in developments	293	99	178	146	105	54	26
No. in wild	414	315	614	320	349	348	426

years and seasons influenced the distributions of grizzlies in the wild and the relative numbers seen. Increased research effort inflated the numbers seen in 1973 and 1974. The spaced distributions of bears on natural foods after 1970 (Cole 1974a, Knight 1974, Knight et al. 1975) contrasted markedly with previous aggregations at garbage dumps (Murie 1961, Hornocker 1962, Craighead and Craighead 1967).

Bear Control

Grizzlies were controlled by capturing them for transplanting or shipment to a zoo, or by destroying them. Records of the numbers of bears destroyed or shipped to zoos date from 1930 (Cole 1970b), but those for transplants have only been complete since 1968. The comparable data on the number of times grizzly bears were controlled in different developed areas by one method or another (a control action) is shown in Table 3.

The 59 and 57 control actions in 1968 and 1969 were probably higher than most previous years because increased numbers of grizzlies were habitually using developed areas during these years, and because manipulations of garbage caused additional bears to visit certain developed areas. As recommended by Craighead and Craighead (1967), only "edible" garbage, which had previously been mixed with a much larger volume of paper and cans, was taken to the Trout Creek dump during these years. This practice apparently increased competition for space and food to the extent that some bears, which were probably less dominant than

Table 3.--Records of grizzly bear control actions in developed areas, Yellowstone National Park, 1968-74.

	Control actions[a]						
	1968	1969	1970	1971	1972	1973	1974
Old Faithful	1[b]	0[b]	22	1	0	0	1
Canyon	14	16	9	11	10	3	6
Lake Outlet	16	25	11	20	13	4	5
Bridge Bay	8	9	0	1	3	3	2
Grant Village . . .	20	5	15	5	0	0	0
Eleven other units .	0	2	13	1	0	0	0
Total control actions	59	57	70	39	26	10	14
No. different bears[c]	?	?	50	33	21	7	11
Pct. successful transplants . . .	33[d]		60	80	74	70	77
No. bears destroyed	5(3)[e]	10(5)	12(6)	6(2)	6(4)	0	2(1)
No. bears to zoos	0	0	8	0	1	0	0

[a] Number of times a bear was captured for transplanting, shipped to a zoo, or destroyed.

[b] Grizzlies present until Rabbit Creek dump opened each year.

[c] Numbers in 1968 and 1969 unknown due to unmarked animals; 4 of 33 were 1970 transplants, 4 of 21 were 1970 or 1971 transplants; 4 of 11 were 1970-73 transplants.

[d] Sample of 20 marked and 1 recognizable bear handled during 1968 and 1969.

[e] Yearly totals with the number that were unintentional because bears charged personnel, came out of drug effects during handling, injured themselves in traps, or failed to recover from drugs shown in parentheses.

those that remained, visited the adjacent (7-8 miles) Canyon, Bridge Bay, and Lake Outlet developed areas. Closing a small dump in 1968 may have also increased the need to control bears in the adjacent (6 miles) Grant Village area during this year.

The comparatively high number of control actions in 1970 and the sharp decline in these over subsequent years were associated with greatly increased efforts to promptly capture, individually tag, and transplant bears that visited developed areas, as well as other aspects of the management program. About 70% of the 124 transplants made were successful, as compared to 33% during 1968 and 1969 and earlier years (Craighead and Craighead 1971). The numbers of different bears controlled in developed areas during each of the 5 years since 1970 were 50, 29, 17, 7, and 7. Five other bears and one previously transplanted animal were controlled in other areas of the park.

Closing the Rabbit Creek dump in 1970 apparently increased the need to control bears in the adjacent (4 miles) Old Faithful developed area for one year. Closing the Trout Creek dump in 1971 did not increase the need to control bears in the adjacent (7-8 miles) Canyon, Bridge Bay, and Lake Outlet areas (32 control actions) above the levels associated with the partial reductions in garbage at this site during 1968 or 1969 (38 and 50 control actions, respectively). Apparently both complete closures of dumps and partial reductions of garbage at such sites will cause some bears to visit adjacent developed areas.

However, [illegible] total number of [illegible] [illegible] concentrations and [illegible]

A total of [illegible] [illegible] population [illegible] control within [illegible] park [illegible] Fourteen of these [illegible] that occurred because bears [illegible] to capture them, came out of the [illegible] [illegible] themselves in [illegible], or [illegible] drugs.

[illegible]

[illegible] population and [illegible] and calculations of [illegible] home ranges [illegible] that overlapped park [illegible] park population. Additional [illegible] and [illegible] area; (Col. 1971, [illegible])

Summary

[illegible] Yellowstone Park [illegible] resulted [illegible] the actual [illegible] about 4300 [illegible] and [illegible], pers.

comm., Greer 1972, Roop 1975) indicate that legal and illegal kills by hunters and kills to protect property or livestock averaged at least 15 grizzlies per year. The average kill before 1967 was probably higher because of less restrictive regulations on hunting or kills to protect livestock. An estimate that removals from both the park and adjacent state areas averaged at least 20 grizzlies per year over the 40 years before 1970 seems possible.

The removals from both park and adjacent areas since 1970 (Table 4) averaged 28 grizzlies per year and generally declined. Those associated with the park program were 26% of total removals. The State of Montana program was similar to the park's and involved closing a dump that was on adjacent lands in 1971. The general decline in kills within adjacent state areas after 1971 coincided with increased restrictions on hunting in Montana and on control to protect property or livestock in all three states. Grizzlies were not legally hunted in Idaho, and the declines in kills could be due to changed attitudes toward the species or less complete reports of kills.

Removals from the park grizzly population alone were calculated to be about 26 bears each in 1970 and 1971, 12 in 1972, 3 in 1973, and 8 in 1974. These include the yearly removals due to the park and Montana control programs, kills by vehicles, and a calculated portion of the kills outside the park. The calculations used ratios of marked and unmarked animals, as described by Cole (1973). Allowances for

Table 4.--Numbers of grizzlies removed by park and state control programs and other known deaths of marked and unmarked bears in adjacent state areas, 1970-74.

Year	Removals due to control programs		Killed by vehicles	Other known kills[a]			Yearly totals
	Park[b]	Mont.		Wyo.	Mont.	Idaho	
1970	20	0	2	12(1)	7(1)	7(1)	48
1971	6	14	1	12	6(3)	5	44
1972	9[c]	2	1	7	0	4	23
1973	0	1	0	7	2	3	13
1974	2	1[d]	0	10(3)	1	0	14
Totals	37	18	4	48(5)	16(4)	19(1)	142

[a] Legal and illegal kills from hunting or to protect livestock or property, with those marked inside Yellowstone Park prior to or since 1970 in parentheses. Changes from previous reports due to delayed confirmation of kills, and "adjacent areas" expanded from 2000 mi^2 to 4300 mi^2. Wyoming data from Roop (1975).

[b] Includes 9 animals donated to zoos, 14 unintentional, and 14 intentional deaths.

[c] Includes 1 unintentional and 1 intentional death due to control actions that were not in developed areas.

[d] Bear transplanted from West Yellowstone Montana, to Wyoming where it died.

additional natural mortality and for emigrations from the park are made in subsequent sections on population numbers and trends.

Reproduction

The numbers of different female grizzlies with young in a population segment that used garbage dumps from 1959 to 1966 (Craighead and Craighead 1967) were tabulated with those seen in and adjacent (1 mile) to the park after dumps were closed (Table 5). The latter are considered samples because some female-young groups could not be distinguished from others and all of those present were not observed. The small yearly samples limit interpretations to the differences between the periods when bears did and did not concentrate at garbage dumps.

My tentative interpretations of the data in Table 5 with that on female reproductive histories (Craighead *et al*. 1969) are as follows: In the population segment that concentrated at dumps the production of young was mainly by older dominant females. These had large litters, but cub survival to yearling age was low. Stokes (1970) postulated that the behavioral interactions among grizzlies that concentrated at dumps reduced the breeding success of females and the survival of young. Part of this reduced survival occurred because females were unable to protect their young from other bears.

With more spaced distributions and slightly lower population densities as a result of the 1970-71 removals (discussed later), some

Table 5.--Numbers and ratios of female grizzlies and young seen in different [illegible] groups in and adjacent (1 mi) to Yellowstone Park during a 1959-66 period and subsequent years.

	Numbers			Numbers			Pct. surviving to
[illegible]	Females	Cubs	Ratios	Females	Yearlings	Ratios	yearling age
1959-66 average	15	33	2.2	15	20	1.3	63
[illegible]	11	22	2.0	9	18	2.0	[illegible]
[illegible]	15	27	1.8	16	24	1.5	[illegible]
1969[b]	14	22	1.6	16	27	1.7	93

[a] Average female-cub figures from Craighead and Craighead (1967) with female-yearling figures calculated from a reported 39% mortality rate in a population segment that used garbage dumps.

[b] Knight et al. (1975).

less dominant younger females also contributed to population reproduction. These either produced one young or smaller litters (Conturier 1954, as cited in Mundy and Flook 1973) and depressed the mean size of litters. A greater portion of the cubs born each year also survived to yearling age under these conditions.

In the present population the rare occurrence of family groups containing 2-year-olds after the late spring-early summer breeding period suggested most female grizzlies were producing cubs at about 3-year intervals. The mean reproductive interval in a sample of 30 females that used garbage dumps was 3.4 years, and the reproductive rate averaged 0.658 (Craighead et al. 1974). By assuming the mean interval for all females in the present population was between 3 and 3.4 years and averaged 3.2 years, the average of 1.8 cubs in litters from 1972-74 reflects a 0.59 reproductive rate. It is not possible to compare the numbers of young produced with these different reproductive intervals and rates because the total numbers of adult females in both the previous and present populations are unknown.

The probable increase in the total numbers of productive females (younger females depressed mean size of litters) and cub-to-yearling survival rates were probably population responses to the higher-than-usual 1970-71 removals and closing dumps. The latter assumes that the regulatory effects of competition for space, food, or mates (Cole 1974b)

within the population segment that concentrated at dumps during the breeding season and the rest of the summer were relieved with less dense distributions on natural foods.

My interpretations differ from Craighead et al. (1974). They concluded, from the smaller mean size of cub litters after 1970, that reproductive rates--and therefore population numbers--declined and that this was due to a "decreased opportunity to breed" at lower population densities and "stresses" from abruptly closing garbage dumps. These conclusions seem inconsistent with the numbers of different females with young observed in recent years (Knight et al. 1975), the associated increased survival rates for young bears, and the usual responses of animal populations to reduced densities (Tanner 1966).

Population Numbers

Estimates of grizzly numbers have been made for Yellowstone Park since 1930, and for the park and adjacent areas as a whole since 1971 (Table 6). Most estimates for the park alone range between 200-300 grizzlies. The more recent figures derived by using marked animals and demographic methods range between 250-300.

The figures for the park and adjacent areas of different size are somewhat confusing because two point estimates are lower than those for the park alone. However, all other estimates accommodate a minimum estimate of about 250 bears for the park, and allow for additional bears within adjacent areas. Continuing studies will undoubtedly further refine these estimates.

Table 6.--Estimates of the numbers of grizzly bears within Yellowstone National Park or within the park and adjacent areas between 1930 and 1974.

Source:	Estimated number of grizzlies: YNP	Estimated number of grizzlies: YNP and adjacent area	Derived from:
Cole (1970b)	200-300		General range of most estimates in park's annual wildlife reports 1930-69.
Craighead and Craighead (1971)		175[a]	Yearly counts of marked and unmarked bears that used garbage dumps 1959-69
Cole (1973)	250-300	300-400[a]	Counts at dumps reported by Craighead and Craighead (1967), counts in park developed areas, counts in park back-country areas by Barnes and Bray (196 and records of bears killed outside the park since 1967.
Cole (1974)	254-290	319-364[a]	Counts of 35 different females with cubs or yearlings and demographic calculations with life history data.
Craighead *et al.* (1974)		136[b]	Mean of 1959-70 counts at dumps, calculations of uncounted bears from proportions of marked and unmarked bears killed outside the park and model projections to 1974.
Cowan (pers. comm. 1975)		301[c]	Same data as Craighead *et al.* (1974) with adjustments for proportions of marked bears not subject to hunting mortality and not projected beyond 197
Knight *et al.* (1975)		237-540	Calculations using sample of cubs and yearlings from park and adjacent area of about 3600 mi^2 and age structure data from Craighead *et al.* (1974).

[a] Adjacent area about 2000 mi^2.

[b] Selected instead of other calculated estimates of 84 or 233 bears and adjacent area about 4300 mi^2.

[c] Estimate corrected from Cowan, *et al.* (1974).

During 1974 I distinguished 12 different grizzly family groups with cubs and 17 with yearlings from 86 sightings of such groups in the park. The mean size of cub and yearling litters was 1.7 and 1.5, respectively. Knight, et al. (197) independently distinguished 14 different females with cubs and 16 with yearlings in the park by methods that included using time-lapse and aerial photographs. The mean size of cub and yearling litters was 1.6 and 1.7, respectively.

Columns I, II, and III in Table 7 show the numbers of grizzlies that could occur in populations with different numbers of females with young, but similar life history features. Because all of the females with cubs or yearlings were not seen or distinguished from other groups in 1974, Column I probably underestimates the park population. If the 30 groups sampled by Knight, et al. (1975) were 75% of those present, a minimum of at least 250 grizzlies could have been present, as shown in Column II. If only 60% were sampled, a minimum of at least 320 could have been present, as shown in Column III. These minimum figures allow for mortality and emigrations equal to cub production. A conservative estimate from the 1974 sample of 30 different family groups and demographic calculations would seem to be that at least 250 grizzlies occur within Yellowstone Park.

Population Trend

My analyses of trends are restricted to the park population. These assume viable populations of several hundred bears can compensate for

Table 7.--Calculated sizes of grizzly populations with different numbers of females with young (Columns I, II, III), but similar life history features.[a]

	Nos. in classes		
Classes:	Column I	II	III
Adult females w/cubs	15	20	25
Adult females w/yearlings	15	20	25
Other adult females	16	21	26
Adult males	39	52	64
Cubs[b]	27	36	45
Yearlings	27	36	45
2-year-olds	27	36	45
3-year-olds	27	36	45
4-year-olds	27	36	45
Potential population size	220	293	365
Mortality and emigration	27	36	45
Minimum population size	193	257	320

[a] Mean reproductive interval for females is 3.2 years. Females first produce cubs at 5 years of age, and the ratio of males to females in adults is 0.8521 (Craighead and Craighead 1971).

[b] Observed 1972-74 ratio of 1.8 cubs per female from Table 5 carried through the yearling to 4-year-old class to give a potential population size that is adjusted to a minimum population size by allowing for mortality and emigrations equal to the yearly production of cubs.

5% removals, as suggested by Pearson (1970) and Cowan (1970) and a portion of additional deaths could also be compensated for to the extent that the production and survival of young increased or emigrations decreased. I also assume, from the sex and ages of the bears removed from the park population, that only adult males were removed in greater proportions than their occurrence.

Considering numbers alone, the man-caused removals of 26 bears in 1970 could have approximated 10% of the park population. If only 13 of these were compensated for (5% of 250), the population could have decreased by 13 animals. This could have made the 1971 removals of 26 bears slightly greater than 10%.

If younger females contributed to population reproduction and the survival of young increased, as indicated in Table 5, the yearly removals of 12, 3, and 8 bears respectively from 1972-74 were probably 5% or less of population numbers. A decline in the proportions of marked park bears in the kills within adjacent state areas from 24% between 1959-70 (Cowan, et al. 1974) to 15% between 1971-74, while 89 of the 115 bears handled in the park control operations were marked, suggests that emigration rates decreased.

The suggested trends from considerations of numbers alone are that population numbers were depressed in 1970 and 1971, either stable or slightly increased in 1972, and probably restored by 1974.

Similar trends were reflected for the 1970-72 period by a more detailed analysis of both the numbers and sex and ages of bears removed (Cole 1973). The minimum estimates of 250 grizzlies derived in 1973 (Cole 1974a) and again in 1974 are consistent with these interpretations, but it is also possible that more than 250 grizzlies were present in 1970.

My conclusions about the trends for the park population are different from those for the bears within both the park and adjacent areas by Craighead, et al. (1974). Their conclusion that the 1970-74 removals caused continuous declines in bear numbers are based on initial estimates of grizzly numbers that are lower than mine for the park alone, and model projections that assumed compensatory processes did not occur.

DISCUSSION AND CONCLUSIONS

Data will need to be collected over an additional series of years to fully evaluate the management program. Evidence of yearly emigrations by social subordinates (Martinka 1974) are considered necessary to show that the park population is at natural carrying capacity levels. Additional yearly samples of grizzly family groups and data on life history features under present conditions are needed to refine population estimates.

The tested hypotheses (see Evaluation Procedures) could be rejected if injuries from grizzlies in developed areas during the 1970-74 period were not reduced below 1963-69 levels, if grizzly visits to developed areas or the need to control bears had not declined through the 1970s,

and if removals were preventing the park population from reestablishing its numbers at natural carrying capacity levels. Because injuries, visits to developed areas, and the need for control were reduced and the park grizzly population appears to be in the process of establishing its numbers at natural levels the tested hypotheses could not be rejected.

My conclusions are that the management program carried out in Yellowstone Park from 1970-74 has made measurable progress toward accomplishing its objectives of reducing injuries from grizzlies and restoring more natural conditions for the species. Removals under this program and from other causes probably temporarily reduced population numbers and emigration rates. These removals apparently are being or have already been compensated for by population reproduction, increased survivals of young, and reduced emigrations.

ACKNOWLEDGMENTS

My evaluation of the park management program were made possible by the cooperation of many persons. Personnel that carried out the program and others that worked in the park routinely reported essential information. Other researchers greatly helped in the attempts to distinguish different family groups of grizzlies and to document bear distributions. Park Service research biologists Douglas Houston, Mary Meagher, and Richard Knight are thanked for the use of data obtained in the course of their research and for helpful reviews of the paper.

APPENDIX I

The scheduled and contingency procedures of the management program were as follows:

I. Scheduled Procedures:

1. (a) Construct a substitute fenced sanitary landfill dump for the Rabbit Creek site, or haul garbage outside park boundaries.
   (b) Enclose the Grant Village and Bridge Bay incinerators within bearproof fences.
   (c) Complete the installation of bearproof garbage cans in concession facilities during 1970.

2. Continue to use the Trout Creek dump during 1970.

3. Employ sufficient seasonal Rangers to assist in regulating campground use and necessary bear control beginning in 1970.

4. Promptly remove bears from developed areas by the use of live traps, immobilization drugs, or, if necessary, lethal devices. Animals which return to developed areas after being transplanted inside the park during a successive 2-year period (initial plus repeated intrusion) may be donated, as requested, to zoos or to states to reestablish bear populations in remote areas outside the park, or utilized as scientific study specimens for educational institutions (exceptions made for young bears and animals that were passing through and not habitually using a developed area).

5. Construct a substitute fenced sanitary landfill dump for the Trout Creek site by the spring of 1971, or haul garbage outside the park.

6. Have the grizzly population foraging entirely on natural foods by 1972, or by the earliest possible later date.

7. Continue to monitor daily reports of grizzly sightings, property damage, incidents, and control actions to provide records for guiding and evaluating the management program.

8. Obtain records of the numbers, sex, and age of marked and unmarked grizzlies killed or sighted in areas outside Yellowstone boundaries to document emigrations from the park grizzly population, contributions to sport hunting, and conflicts with agriculture.

9. Carry out research to develop improved control methods, test aversive agents and other methods to discourage bears from using park developed areas, and assess program results in relation to park objectives of preserving a grizzly population under natural conditions and providing for the safety of visitors.

10. Expand public information programs so bears do not obtain food from park visitors.

11. Work with owners, private individuals, and other state and federal agencies to encourage the proper sanitary disposal of garbage and so not to attract bears to places of human habitation outside park boundaries.

II. Contingency Procedures:

1. Continue to use the Trout Creek dump beyond the scheduled April closure on a "phase-out" basis if grizzly intrusions into developed areas begin to exceed control capabilities, or lead to excessive numbers of animals being destroyed.

2. Manipulate opening or closing dates of campgrounds; restrict camping to enclosed trailer or pickup units; and/or initiate temporary closures of campgrounds, if necessary.

February 1970

References Cited

Cole, G. F. 1969. Grizzly bear (Ursus horribilis). Res. Note, Yellowstone Nat. Park. 8 p. (mimeo).

_____. 1970a. Grizzly bear management in Yellowstone Park, 1970. 2nd. Int. Conf. on Bear Res. and Mgmt., U. of Calgary, Alberta, and Res. Note No. 3, Yellowstone Nat. Park. 11 p. + appendix. (mimeo).

_____. 1970b. Preservation and management of grizzly bears in Yellowstone National Park. 2nd Int. Conf. on Bear Res. and Mgmt., U. of Calgary, Alberta, and BioScience 21(16):858-864.

_____. 1971. Progress in restoring a natural grizzly bear population in Yellowstone National Park. AAAS Symposium on Research in National Parks, Philadelphia, 29 Dec. 21 p. (mimeo).

_____. 1972. Grizzly bear-elk relationships in Yellowstone National Park. J. Wildl. Mgmt. 36(2):556-561.

_____. 1973. Management involving grizzly bears in Yellowstone National Park, 1970-72. U.S. Dept. of Interior, Nat. Park Serv., Natur. Res. Rpt. No. 7. 10 p.

_____. 1974a. Management involving grizzly bears and humans in Yellowstone National Park, 1970-73. BioScience 24(6): 335-338.

_____. 1974b. Population regulation in relation to K. Pres. at Mont. Chapter of the Wildl. Soc., Bozeman, Feb. 22. 17 p. (mimeo).

Cowan, I. McT. 1970. The status and conservation of bears (Ursidae) of the world--1970. pp. 343-367. in S. Herrero (ed.) 1972. Bears: their biology and management. Int. Union for Conserv. of Nature and Natur. Res., Morges, Switzerland. 371 p.

Cowan, I. McT., et al. 1974. Report of committee on the Yellowstone grizzlies. Nat. Acad. of Science Rpt. 61 p. (multi).

Craighead, J. J. and F. C. Craighead, Jr. 1967. Management of bears in Yellowstone National Park. Environ. Res. Inst. and Mont. Coop. Wildl. Res. Unit Rpt., U. of Montana. 113 p. (multi).

Craighead, J. J., M. Hornocker, and F. C. Craighead, Jr. 1969. Reproductive biology of young female grizzly bears. J. Reprod. Fert. Suppl. 6:447-475.

Craighead, J. J. and F. C. Craighead, Jr. 1971. Grizzly bear-man relationships in Yellowstone National Park. BioScience 21(16): 845-857.

Craighead, J. J., J. R. Varney, and F. C. Craighead, Jr. 1974. A population analysis of the Yellowstone grizzly bears. Mont. Forest & Conserv. Expt. Sta. Bul. 40, U. of Montana. 20 p.

Greer, K. R. 1972. Grizzly bear mortality and management programs in Montana during 1971. Job Progress Rpt., Proj. W-120-R-3, Mont. Fish and Game Dept. 44 p.

Hornocker, M. G. 1962. Population characteristics and social and reproductive behavior of the grizzly bear in Yellowstone National Park. M.S. thesis, Mont. State Univ., Missoula. 94 p.

Houston, D. B. 1971. The status of research on ungulates in northern Yellowstone National Park. AAAS Symposium on Research in National Parks, 29 Dec. 21 p. (mimeo).

Knight, R. R. 1974. Grizzly bear study team - first interim report. Unpubl. rpt., Interagency Grizzly Bear Studies. 11 p. (typewritten).

Knight, R. R., et al. 1975. Annual report, Interagency Grizzly Bear Study Team, 1974. 44 p. + appendices. (multi).

Martinka, C. J. 1971. Status and management of grizzly bears in Glacier Nat. Park, Montana. Trans. No. Amer. Wildl. and Natur. Res. Conf. 36:312-322.

_____. 1974. Population characteristics of grizzly bears in Glacier National Park, Montana. J. Mammalogy 55(1):21-29.

Mundy, K. R. D. and D. R. Flook. 1973. Background for managing grizzly bears in the national parks of Canada. Canadian Wildl. Serv. Rpt. Ser. No. 22. 35 p.

Murie, A. 1961. A naturalist in Alaska. The Devin-Adair Co., New York. 302 p.

Pearson, A. M. 1970. Population characteristics of the northern interior grizzly in the Yukon Territory, Canada. pp. 32-35 In S. Herrero (ed.) 1972. Bears: their biology and management. Int. Union for Conserv. of Nature and Natur. Res., Morges, Switzerland. 371 p.

_____. 1975. The northern interior grizzly bear (Ursus arctos L.) (in press).

Poore, M. E. D. 1962. The method of successive approximation in descriptive ecology. pp. 35-68 in J. B. Cragg (ed.) 1962. Advances in ecological research. Vol. 1. Academic Press, New York.

Roop, L. 1975. Grizzly bear. Progress Rpt., Proj. W-87-R-1. Ariz. Game and Fish Dept. 60 p. (multi).

Stokes, A. W. 1970. An ethologist's views on managing grizzly bears. Bioscience 20(21):1154-1157.

Tanner, J. T. 1966. Effects of population density on growth rates of animal populations. Ecology 47(5):733-745.

Wilcoxon, F. and Roberta Wilcox. 1964. Some rapid approximate statistical procedures. Lederle Laboratories, Pearl River, New York. [illegible] p.

Zunino, F. and S. Herrero. 1972. The status of the brown bear (Ursus arctos) in Abruzzo National Park, Italy, 1971. Biol. Conserv. 4(4):266-272.

10-561

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

NUMERIC CODE: 1571
DATE: 5/9/75

OR OFFICE	FINANCE OFFICE	FISCAL YEAR
owstone National Park	Rocky Mountain Region	1976
PRIATION SYMBOL AND TITLE 1461036	ACTIVITY OR SUBACTIVITY	ACCOUNT NO.
ation of the National Park System	Park Management	- - -

COMPONENTS OF COST BY OBJECT CLASSIFICATION	ORIGINAL PLAN	NET TOTAL OF CHANGES	CURRENT PLAN
2- Personnel Compensation and Benefits *(From Form 10-561a)*	4,438,586	1,892,884	
- Travel and Transportation of Persons	35,000	12,600	
- Transportation of Things	14,400	6,600	
- Rent, Communications, and Utilities *(Includes GSA Office Space Rental $)*	214,600	68,000	
- Printing and Reproduction (Incl. GSA Rental)	4,000	500	
- Other Services *(Itemize on reverse side)*	655,800	234,500	
- Services of Other Agencies *(Itemize on reverse side)*			
- Supplies and Materials and Non-Capitalized Equipment *(Direct Purchases)*	196,314	70,916	
- Equipment *(Capital Acquisitions - Itemize Below)*	343,000	108,500	
- Lands and Structures			
- Grants, Subsidies, and Contributions			
- Insurance Claims and Indemnities			
- Depreciation of Equipment			
Equipment Operations			
Storehouse Operations			
- Corral Operations			
Sign Shop Operations			
Manufacturing of Stores and Equipment			
ount needed for July 1 - Sept. 30, 1976		2,394,500	
djustment to bring needs to authorized		- 446,900	
TOTAL *AUTHORIZED* PLAN	5,901,700	1,947,600	

DISTRIBUTION	EST. CUMULATIVE OBLIGATIONS BY APPORTIONMENT PERIOD *(Quarterly or Tri-annual)*				
TO	COMPONENTS	FIRST	SECOND	THIRD	FOURTH
RMR Budget	Personal services *(11 & 12)*	2,132,600	3,098,000	4,438,586	
	All Other Expenses	237,600	735,600	1,120,114	
	Capital Outlays *(31)*	123,000	231,400	343,000	
	Total Authorized Plan	2,493,200	4,065,000	5,901,700	

MMENDED *(Sig. & Title)* *(Date)* CONCURRED *(Sig. & Title)* *(Date)* APPROVED *(Sig. & Title)* *(Date)*

Form 10-561a
(7/67)

NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 1571

DATE: 5/9/75

AREA OR OFFICE	FINANCE OFFICE	FISCAL YEAR
Yellowstone National Park	Rocky Mountain Region	1976
APPROPRIATION SYMBOL AND TITLE 1461036	ACTIVITY OR SUBACTIVITY	ACCOUNT NUMBER
Operation of the National Park System	Park Management	- -

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
	Permanent Full-Time Positions						
1571-01	Park Manager (Anderson)	15/7	1	1.0	35,782	8,946	
1571-05	Park Manager (Haraden)	14/7	1	1.0	30,699	7,675	
1571-10	Park Manager (Hennesay)	13/7	1	1.0	26,178	6,545	
1571-22	Secretary (Steno) (Dupaix)	7/5	1	1.0	11,924	2,981	
1571-02	Administrative Off. (Williams)	13/10	1	1.0	28,359	7,090	
1571-06	Personnel Officer (Vacant)	12/1	1	1.0	18,463	4,616	
1571-15	Programs Analysis Officer (Franklin)	12/2	1	1.0	19,078	4,770	
1571-21	Financial Programs Specialist (Vacant)	11/1	1	1.0	15,481	3,870	
1571-28	Asst. Personnel Officer (Chamberlin)	10/5	1	1.0	16,001	4,000	
1571-33	Procurement Agent (Ludwig)	9/4	1	1.0	14,125	3,531	
1571-36	Supply Technician (Wolfe)	7/7	1	1.0	12,626	3,157	
1571-41	Supv. Inventory Mgmt. Spec. (Christoperh)	9/1	1	1.0	12,841	3,210	
1571-44	Office Services Supervisor (Thompson)	6/3	1	1.0	10,105	2,526	
1571-57	Secretary (Steno) (Marchington)	5/4	1	1.0	9,349	2,337	
1571-61	Administrative Asst. (Vacant)	7/1	1	1.0	10,520	2,630	
1571-89	Payroll Clerk (Points)	5/7	1	1.0	10,198	2,550	
1571-93	File Clerk (Larson)	4/5	1	1.0	8,608	2,152	
1571-17	Photographer (Keller)	11/4	1	1.0	17,029	4,257	
1571-18	Safety Officer (Ellis)	11/7	1	1.0	18,577	4,644	
1571-11	Landscape Architect (Swan)	11/2	1	1.0	15,997	4,199	
1571-25	Supv. Res. Biologist (Cole)	14/6	1	1.0	29,846	7,793	
1571-35	Research Biologist (Houston)	12/6	1	1.0	21,538	5,465	
1571-45	Research Biologist (Meagher)	12/3	1	1.0	19,693	5,000	
1571-47	Research Biologist (Despain)	12/3	1	1.0	19,693	5,000	
1571-50	Wildlife Research Clerk (Kurtz)	6/8	1	1.0	11,685	2,967	
1572-01	Supv. Park Ranger (Mebane)	13/6	1	1.0	25,451	6,461	
1572-05	Supv. Park Ranger (Tyers)	12/10	1	1.0	23,998	6,092	
1572-30	Sec. (Steno) (Neiswander)	5/2	1	1.0	8,783	2,230	
1572-35	Supv. Park Ranger (Halladay)	11/4	1	1.0	17,029	4,323	
1572-40	Supv. Park Ranger (Pugh)	11/2	1	1.0	15,997	4,061	
1572-42	Supv. Park Ranger (Hendricks)	9/3	1	1.0	13,697	3,477	
1573-01	Supv. Park Ranger (Estey)	13/7	1	1.0	26,178	6,648	
1573-20	Supv. Park Ranger (Phillips)	12/3	1	1.0	19,693	5,000	
1573-35	Supv. Park Ranger (Mihan)	9/6	1	1.0	14,981	3,802	

NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 1571

DATE: 5/9/75

AREA OR OFFICE: Yellowstone National Park

FINANCE OFFICE: Rocky Mountain Region

FISCAL YEAR: 1976

APPROPRIATION SYMBOL AND TITLE: 1461036 Operation of the National Park System

ACTIVITY OR SUBACTIVITY: Park Management

ACCOUNT NUMBER:

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
1573-42	Park Ranger (Blair)	7/2	1	1.0	10,871	2,761	
1573-43	Park Ranger (Lesko)	7/3	1	1.0	11,222	2,851	
1573-44	Park Ranger (McClure)	7/3	1	1.0	11,222	2,851	
1573-49	Supv. Park Ranger (Danforth)	11/3		.5	8,257		
1573-50	Supv. Park Ranger (Childs)	9/1	1	1.0	12,841	3,258	
1573-52	Supv. Park Ranger (Linderer)	9/1	1	1.0	12,841	3,258	
1573-54	Supv. Park Ranger (Westphal)	9/1	1	1.0	12,841	3,258	
1573-59	Supv. Park Ranger (Miller, M.)	9/4		.5	7,063		
1573-98	Supv. Park Ranger (Scott, T.)	12/3	1	1.0	19,693	5,000	
1573-74	Supv. Park Ranger (Johnson)	11/1		.5	7,741		
1573-76	Supv. Park Ranger (Patterson)	9/3		.5	6,849		
1573-80	Supv. Park Ranger (Scott, E.)	9/6	1	1.0	14,981	3,802	
1573-84	Supv. Park Ranger (Nuss)	12/5	1	1.0	20,923	5,312	
1573-86	Supv. Park Ranger (Blank)	9/3		.5	6,849		
1573-88	Supv. Park Ranger (Mernin)	11/3		.5	8,257		
1573-78	Supv. Park Ranger (Koehn)	9/3		.5	6,849		
1573-96	Supv. Park Ranger (Orgill)	9/5		.4	5,821		
1573-72	Supv. Park Ranger (Williamson)	12/3	1	1.0	19,693	5,000	
1573-55	Supv. Park Ranger (Olson)	9/3		.5	6,849		
1573-61	Park Ranger (Lehr)	7/2	1	1.0	10,871	2,761	
1573-60	Secretary (Steno) (Bekemans)	6/2	1	1.0	9,789	2,487	
1573-47	Supv. Park Ranger (Frago)	11/1	1	1.0	15,481	3,328	
1573-90	Supv. Park Ranger (Rudolph)	11/1		.5	7,741		
1573-45	Supv. Park Ranger (Vacant)	9/1	1	1.0	12,841	3,258	
1573-10	Supv. Park Ranger (Sellers)	12/6	1	1.3	21,538	5,465	
1573-03	Supv. Park Ranger (Bucknall)	12/5	1	1.0	20,923		
1573-03	Supv. Park Ranger (Bucknall)	12/6		.3		5,465	
1573-30	Supv. Park Ranger (Susong)	9/8	1	1.3	15,837	4,018	
1573-99	Fire Control Technician (Black)	7/7	1	1.0	12,626		
1573-99	Supv. Park Ranger (Black)	9/3		.3		3,480	
1573-62	Supv. Park Technician (Berg)	8/6	1	1.3	13,580	3,448	
1574-01	Supv. Civil Engr. (Nordgren)	13/6	1	1.0	25,451	6,363	
1574-12	Prog. Asst. (Pope)	7/3	1	1.0	11,222	2,806	
1574-20	Facility Manager (Hape)	12/5	1	1.0	20,923	5,231	
1574-33	Project Foreman (Hoppe)	Ungr.	1	1.0	17,784	4,446	
1574-63	Eng. Equip. Op. (MacDonald)	Ungr.	1	1.0	13,250	3,313	
1574-68	Eng. Equip. Op. (Holst)	Ungr.	1	1.0	13,250	3,313	
1574-91	Facility Manager (Tobin)	11/8	1	1.0	19,093	4,773	
1574-35	Maint. Foreman (Hayes)	Ungr.	1	1.0	16,661	4,165	
1574-65	Eng. Equip. Op. (Hape, F.)	Ungr.	1	1.0	13,250	3,313	
1574-70	Eng. Equip. Op. (Marchington)	Ungr.	1	1.0	14,456	3,614	
1574-80	Facility Manager (Armstrong)	11/7	1	1.0	18,577	4,644	

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NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 1571

DATE: 5/9/75

AREA OR OFFICE: Yellowstone National Park

FINANCE OFFICE: Rocky Mountain Region

FISCAL YEAR: 1976

APPROPRIATION SYMBOL AND TITLE: 1461036 Operation of the National Park System

ACTIVITY OR SUBACTIVITY: Park Management

ACCOUNT NUMBER:

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
574-67	Maint. Foreman (Berg)	Ungr.	1	1.0	16,661	4,165	
575-03	Civil Eng. (EE) (Fellbaum)	12/7	1	1.0	22,153	5,538	
575-07	Supv. Elect. Tech. (Huffman)	12/5	1	.9	18,832	5,231	
575-27	Building Foreman (Bekemans)	Ungr.	1	1.0	15,434	3,859	
575-47	Carpenter (Wormsbecker)	Ungr.	1	1.0	12,875	3,219	
575-39	Pipefitter Foreman (Wood)	Ungr.	1	1.0	17,285	4,321	
575-55	Painter (Meeks)	Ungr.	1	1.0	12,418	3,105	
575-88	Pipefitter (Dore)	Ungr.	1	1.0	13,312	3,328	
575-18	Facility Manager (Vacant)	11/1	1	1.0	15,481		
575-31	Electrician Foreman (Peterson)	Ungr.	1	1.0	17,285	4,321	
575-49	Electrician (Gerecke)	Ungr.	1	1.0	12,834	3,209	
575-89	Facility Manager (McCann)	11/4	1	1.0	17,029	4,257	
578-72	Motor Equip Manager (Vacant)	11/6	1	1.0	18,061	4,118	
578-70	Mechanic Foreman (Herne) WS	11/5	1	1.0	17,784	4,446	
578-68	Mechanic Leader (Gillett) WL	11/5	1	1.0	15,122	3,780	
578-69	Mechanic Hvy. Duty (Roberts) WG	11/5	1	1.0	13,749	3,437	
578-71	Mechanic Hvy. Duty (Yanc) WG	11/4	1	1.0	13,250	3,312	
578-73	Mechanic Hvy. Duty (Gray) WG	11/5	1	1.0	13,749	3,437	
578-76	Mechanic Auto (Smith) WG	10/5	1	1.0	13,312	3,328	
578-77	Mechanic Auto (Abegglen) WG	10/3	1	1.0	12,355	3,089	
578-75	Equip. Dispatcher (Hayes) WG	8/3	1	1.0	11,544	2,886	
585-17	Superintendent (Schulmeyer)	9/6	1	1.0	14,981	3,802	
585-NEW	Maintenance Man (Winters)	Ungr.	1	1.0	10,712	2,680	
	TOTAL PERMANENT		87	93.3	1,493,227	354,508	
	Deduct Lapses			5.6	83,536	- 12,524	
	Add regular pay above annual rate (2/260 of total permanent)				11,107	+ 6,262	
	NET PERMANENT			87.7	1,420,798	348,246	

Form 10-516
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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 15/1
DATE: 5/9/75

AREA OR OFFICE: Yellowstone National Park
FINANCE OFFICE: Rocky Mountain Region
FISCAL YEAR: 1976
APPROPRIATION SYMBOL AND TITLE: 1461076 Operation of the National Park System
ACTIVITY OR SUBACTIVITY: Park Management
ACCOUNTING CODE:

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
	Positions other than permanent						
571-000	Clerk (Steno) (Vacant)	4/1	1	0.9	7,008	1,899	
571-000	Secretary (Steno) (Gwin)	5/6	1	0.9	9,158	2,479	
571-000	Clerk (Steno) (Churchwell)	4/2	1	0.9	7,238	2,026	
571-000	Public Info. Spec. (Carder)	7/1	1	0.4	4,453	2,630	
571-000	Public Info. Spec. (Oliver)	5/2	1	0.9	8,102	2,196	
571-000	Sanitarian (Brolliar)	9/1	1	0.5	6,910	3,210	
571-000	Management Assistant (Wing)	11/10	1	0.2	1,293	1,293	
571-000	Management Asst. (Replogle)	7/4	1	0.3	2,137	2,137	
571-000	Clerk (Typing) (Vacant)	4/1	1	0.7	5,317	1,899	
571-000	Personnel Asst. (Parker)	7/5	1	0.9	11,002	2,981	
571-000	Personnel Clerk (Hall)	5/4	1	0.9	8,621	2,337	
571-000	Clerk (Steno) (Lumsden)	5/4	1	0.9	8,621	2,337	
571-000	Clerk-Typist (Harris)	4/2	1	0.9	7,238	1,962	
571-000	Clerk-Typist (Huber)	3/2	1	0.9	6,451	1,747	
571-000	Clerk-Typist (Rudolph)	3/2	1	0.9	6,451	1,747	
571-000	Supply Technician (Harris)	7/2	1	0.9	10,042	2,718	
571-000	Supply Technician (Gwin)	7/4	1	0.9	10,675	2,893	
571-000	Clerk-Typist (Sena)	3/1	1	0.6	4,056	1,693	
571-000	Purchasing Agent (Murray)	7/4	1	0.9	10,675	2,893	
571-000	Clerk-Typist (Taylor)	3/1	1	0.9	6,240	1,693	
571-000	Programs Clerk (Peterson)	5/2	1	0.9	8,102	2,196	
571-000	Clerk (Vacant)	5/1	1	0.9	7,853	2,125	
571-000	Clerk (Steno) (Takenaka)	4/2	1	0.9	7,238	1,962	
571-000	Clerk-Typist (Vacant)	3/1	1	0.3	2,029	1,691	
571-000	Admin. Clerk (Warren)	5/2	1	0.3	2,071	2,196	
571-000	Clerk (Typing) (Krebs)	4/2	1	0.9	7,238	1,962	
571-000	Admin. Clerk (Reiley)	5/4	1	0.9	8,261	2,337	
571-000	Clerk (Typing) (Vacant)	4/1	1	0.9	7,008	1,899	
571-000	Clerk (Thompson)	4/1	1	0.9	7,008	1,899	
571-000	Clerk-Typist (Vacant)	3/1	1	0.4	2,706	1,691	
571-000	Clerk-Typist (Vacant)	3/1	1	0.3	2,029	1,691	
571-000	Warehouseman (Peterson)	Ungr	1	0.4	3,977	2,486	
571-000	Clerk-Typist (King)	3/1	1	0.4	2,706	1,691	
571-000	Park Aid (Kitayama)	3/1	1	0.4	2,706	1,691	
571-000	Clerk-Typist (Vacant)	3/1	1	0.4	2,706	1,691	
571-000	Clerk-Typist (Vacant)	3/1	1	0.4	2,706	1,691	
571-000	Clerk-Typist (Vacant)	3/1	1	0.4	2,706	1,691	
571-000	Laborer (Vacant)	Ungr	2	0.3	2,336	2,336	
571-000	Biol. Tech. Plant	7.1	1	.6	—	2,672	
571-000	Biol. Tech. Plant	5/1	1	.4	2,912	2,160	
571-000	Biol. Tech. Plant	4/1	1	.7	5,198	3,854	

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NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 1571

DATE: 5/9/75

AREA OR OFFICE: ellowstone National Park

FINANCE OFFICE: Rocky Mountain Region

FISCAL YEAR: 1976

APPROPRIATION SYMBOL AND TITLE: 1461036 peration of the National Park System

ACTIVITY OR SUBACTIVITY: P l Management

ACCOUNT NUMBER:

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CORRECT PLAN
571-000	Clerk (Typing)	4/1				1,927	
572-000	Oral Comm. Spec. (Lewis)	11/2	1	0.3	3,999	2,275	
572-000	Geothermal Tech. (Hutchinson)	6/3	1	0.9	9,095	2,565	
572-000	Tech.-Curator (Nordling)	7/1	1	0.9	9,468	2,670	
572-000	Supv. Park Ranger-Nat. (Jonas)	7/3	1	0.3	2,806	1,961	
572-000	Supv. Park Ranger (Townsend)	7/2	1	0.2	2,718	1,844	
572-000	Supv. Park Ranger (Parkinson)	6/6	1	0.3	3,316	2,336	
572-000	Supv. Park Ranger (Baker)	6/3	1	0.2	2,526	1,868	
572-000	Supv. Park Ranger (Naturalist)	7/1	2	0.5	5,520	3,724	
572-000	Supv. Park Ranger (Naturalist)	6/1	4	1.0	9,993	7,829	
572-000	Park Ranger (Naturalist)	5/1	33	8.5	75,288	60,603	
572-000	Park Naturalist (Ranger)	4/1	12	3.0	24,188	23,251	
572-000	Park Technician (AV)	4/1	1	0.2	2,029	1,635	
572-000	Park Aides	3/1	3	0.8	5,433	4,266	
572-000	Park Ranger (Nat.-winter)	5/1	3	0.8	6,765		
572-000	Park Ranger (Historian)	6/1	1	0.3	2,982		
573-000	Supv. Comm. Oper. (Chamberlin)	5/7	1	0.9	9,178	2,587	
573-000	Clerk-Typist (Slothower)	3/2	1	0.9	6,290	1,774	
573-000	Clerk (Typing) (Holland)	4/4	1	0.9	7,520	2,123	
573-000	Park Technician (Miller, F.)	5/4	1	0.9	8,414	2,377	
573-000	Park Rangers (General)	7/1	5	1.4	14,728	8,416	
573-000	Park Rangers (General)	6/1	10	2.4	22,735	16,104	
573-000	Park Rangers (General)	5/1	35	10.5	89,250	62,050	
573-000	Park Rangers (General)	4/1	6	2.0	15,192	9,875	
573-000	Park Technician (Vacant)	4/1	1	0.9	6,836	1,927	
573-000	Clerk-Typist (Judson)	3/3	1	0.9	6,493	1,832	
573-000	Forestry Technician	6/1	2	1.2	10,000	5,400	
573-000	Forestry Technician	4/1	1	0.2	2,000	2,200	
573-000	Laborer, Forestry	Ungr	4	0.8	7,100	8,700	
573-000	Supervisory Smokejumper	7/1	1	1.0	7,300	2,672	
573-000	Park Technicians (Backcountry)	4/1	8	4.6	17,000	15,418	
573-000	Fire Portection Inspector	6/1	1	1.0	6,074	2,402	
573-000	Forestry Technicians	6/1	2	0.6	2,912	2,912	
573-000	Forestry Technicians	5/1	2	1.0	6,150	2,160	
573-000	Forestry Aid	4/1	12	6.0	22,416	18,912	
573-000	Forestry Aid	3/1	8	4.0	13,248	11,168	
573-000	Secretary Steno	4/4	1	1.1	7,790	2,123	
573-000	Clerk-Typist	4/1	1	0.9	5,300	1,927	
574-000	Secretary(Steno)(Nichols)	5/4	1	0.9	8,620	2,335	
574-000	Eng. Tech. (O'Neale)	9/2	1	0.9	12,250	3,318	
574-000	Admin. Clerk (Pennell)	5/10	1	0.9	10,195	2,761	
574-000	Road Foreman	Ungr	1	0.2	3,324		
574-000	Road Foreman	Ungr	1	0.3	3,987		
574-000	Road Foreman	Ungr	2	1.1	16,867	7,831	

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 1571
DATE: 5/9/75

AREA OR OFFICE: ellowstone National Park
FINANCE OFFICE: Rocky Mountain Region
FISCAL YEAR: 1976
APPROPRIATION SYMBOL AND TITLE: 1461036 peration of the National Park System
ACTIVITY OR SUBACTIVITY: Park Management
ACCOUNT NUMBER:

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
74-000	Road Foreman	Ungr	1	0.6	9,741	3,957	
74-000	Road Foreman	Ungr	1	0.6	9,126	6,845	
74-000	Road Foreman	Ungr	3	1.7	24,147	10,702	
74-000	Road Foreman	Ungr	1	0.3	4,536		
74-000	Trail Foreman	Ungr	1	0.4	6,626	3,916	
74-000	Trail Foreman	Ungr	1	0.3	3,842	3,018	
74-000	Trail Foreman	Ungr	1	0.3	5,191	3,749	
74-000	Trail Foreman	Ungr	1	0.3	4,032	3,276	
74-000	Road Leader	Ungr	1	0.5	6,619	3,073	
74-000	Eng. Equip. Op.	Ungr	18	4.5	68,030	25,174	
74-000	Eng. Equip. Op.	Ungr	6	1.9	24,069	8,940	
74-000	Eng. Equip. Op.	Ungr	6	2.5	29,736	12,272	
74-000	Eng. Equip. Op.	Ungr	1	0.3	4,111	2,969	
74-000	Eng. Equip. Op.	Ungr	1	0.7	8,612	3,110	
74-000	Eng. Equip. Op.	Ungr	7	1.8	22,157	10,617	
74-000	Eng. Equip. Op.	Ungr	8	1.8	20,424	8,081	
74-000	Motor Vehicle Operator	"	9	3.4	37,306	13,378	
74-000	Motor Vehicle Operator	"	14	4.4	44,990	19,282	
74-000	Motor Vehicle Operator	"	2	1.2	13,747	7,8[illegible]	
74-000	Motor Vehicle Operator	"	3	0.9	9,513	5,585	
74-000	Motor Vehicle Operator	"	7	3.3	34,174	20,675	
74-000	Motor Vehicle Operator	"	6	2.3	22,820	13,890	
74-000	Trail Maintenance Worker	"	1	0.6	6,362	2,584	
74-000	Trail Maintenance Worker	"	9	3.4	33,962	20,835	
74-000	Trail Maintenance Worker		1	0.6	6,192	2,663	
74-000	Trail Maintenance Worker	"	2	0.8	7,048	4,971	
74-000	Trail Maintenance Worker	"	1	0.3	2,570	1,909	
74-000	Maintenance Worker		1	0.5	6,014	2,792	
74-000	Maintenance Worker	"	2	0.7	6,501	4,971	
74-000	Laborer	"	2	1.0	10,213	2,470	
74-000	Laborer	"	1	0.4	4,030	2,382	
74-000	Laborer	"	29	8.9	81,453	48,506	
74-000	Laborer	"	12	3.0	26,333	15,800	
74-000	Blacksmith	"	1	0.9	12,288	3,328	
74-000	Signmaker	"	1	0.6	7,386	3,000	
74-000	Cook	"	1	0.2	2,136		
75-000	Electronic Tech.	9/5	1	0.7	10,192	3,640	
75-000	Clerk-Typist	3/5	1	0.8	6,124	1,914	
75-000	Maintenance Foreman	Ungr	1	0.7	12,631	4,321	
75-000	Maintenance Foreman	Ungr	1	0.9	14,246	3,968	
75-000	Buildings and Utilities Foreman	Ungr	3	1.6	23,101	7,415	

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FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE	1571
DATE	5/9/75
AREA OR OFFICE	Yellowstone National Park
FINANCE OFFICE	Rocky Mountain Region
FISCAL YEAR	1976
APPROPRIATION SYMBOL AND TITLE	1461036 Operation of the National Park System
ACTIVITY OR SUBACTIVITY	Park Management
ACCOUNT NUMBER	

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	COMPL. PLAN
1575-000	Electronic Mechanic	Ungr	1	0.4	5,300	2,650	
1575-000	Electronic Mechanic	Ungr	1	0.7	8,590	3,068	
1575-000	Carpenter	Ungr	2	1.5	18,818	7,725	
1575-000	Carpenter	Ungr	3	1.7	20,537	7,451	
1575-000	Painter	Ungr	1	0.4	4,776		
1575-000	Painter	Ungr	1	0.4	4,600		
1575-000	Electrician	Ungr	3	1.9	24,186	11,550	
1575-000	Eng. Equip. Operator	Ungr	1	0.3	4,586	3,312	
1575-000	Plumber	Ungr	1	0.2	2,630		
1575-000	Disposal Plant Operator	Ungr	1	0.9	10,618	2,876	
1575-000	Boiler Plant Operator	Ungr	4	2.5	27,872	13,379	
1575-000	Motor Vehicle Operator	Ungr	1	0.5	5,790	2,151	
1575-000	Maintenance Worker	Ungr	1	0.4	4,541	2,683	
1575-000	Maintenance Worker	Ungr	4	2.2	22,743	12,405	
1575-000	Laborer	Ungr	2	0.8	7,322	5,491	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	8,904	3,918	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	9,412	1,882	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	8,232	1,811	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	9,574	3,949	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.7	9,806	3,807	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.4	5,482	3,289	
1575-000	Motor Vehicle Operator	Ungr	1	0.5	6,227	2,936	
1575-000	Motor Vehicle Operator	Ungr	1	0.3	3,090	1,360	
1575-000	Motor Vehicle Operator	Ungr	2	0.7	7,445	5,005	
1575-000	Motor Vehilce Operator	Ungr	4	1.4	14,115	8,747	
1575-000	Motor Vehicle Operator	Ungr	2	0.6	6,106	3,778	
1575-000	Maintenance Worker	Ungr	1	0.4	4,550	2,730	
1575-000	Maintenance Worker	Ungr	3	1.4	14,711	7,873	
1575-000	Maintenance Worker	Ungr	15	4.4	44,167	32,007	
1575-000	Maintenance Worker	Ungr	11	3.6	34,517	24,272	
1575-000	Laborer	Ungr	17	5.0	45,936	29,392	
1575-000	Laborer	Ungr	12	3.9	34,435	24,071	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	8,904	3,918	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	9,412	1,882	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	8,232	1,811	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.6	9,574	3,949	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.7	9.806	3,807	
1575-000	Buildings and Utilities Fore.	Ungr	1	0.4	5,482	3,289	
1575-000	Motor Vehicle Operator	Ungr	1	0.5	6,227	2,936	
1575-000	Motor Vehicle Operator	Ungr	1	0.3	3,090	1,360	
1575-000	Motor Vehicle Operator	Ungr	2	0.7	7,445	5,005	
1575-000	Motor Vehicle Operator	Ungr	4	1.4	14,115	8,747	

OPM 10-3010
7/67)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 1571
DATE: 5/9/75

AREA OR OFFICE: Yellowstone National Park
FINANCE OFFICE: Rocky Mountain Region
FISCAL YEAR: 1976
APPROPRIATION SYMBOL AND TITLE: 1461036 Operation of the National Park System
ACTIVITY OR SUBACTIVITY: Park Management
ACCOMPLISHMENT: - - -

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
575-000	Motor Vehicle Operator	Ungr	2	0.6	6,106	3,778	
575-000	Maintenance Worker	Ungr	1	0.4	4,550	2,730	
575-000	Maintenance Worker	Ungr	3	1.4	14,711	7,873	
575-000	Maintenance Worker	Ungr	15	4.4	44,167	32,007	
575-000	Maintenance Worker	Ungr	11	3.6	34,517	24,272	
575-000	Laborer	Ungr	17	5.0	45,936	29,392	
575-000	Laborer	Ungr	12	3.9	34,435	24,071	
578-810	Mechangic Hvy. Duty (Ludwig) WG	11/5	1	0.9	12,691	3,437	
578-803	Mechanic Auto. (Gwaltney) WG	10/5	1	0.9	12,288	3,328	
578-815	Mechanic Auto. (Chapman) WG	10/2	1	0.9	10,963	2,969	
578-817	Mechanic Auto. (Dolsman) WG	10/2	1	0.9	10,963	2,969	
578-816	Mechanic Auto. (Carr) WG	10/3	1	0.9	11,405	3,089	
578-809	Body & Fenderman (Vacant) WG	10/1	1	0.9	10,522	2,850	
578-820	Warehouseman, Auto.(Winkle) WG	5/3	1	0.9	9,542	2,584	
578-832	Automotive Worker (Powell) WG	5/3	1	0.9	9,542	2,584	
578-823	Automotive Worker (Vacant) WG	5/3	1	0.8	8,747	2,584	
578-694	Automotive Worker (Green) WG	5/2	1	0.7	6,500	1,721	
585-000	Park Technician (Historian)	5/1	2	1.0	8,172	3,829	
585-559	Laborer (Crispin)	Ungr	1	0.5	4,389	2,229	
	Subtotal		577	229.2	2,261,463	1,166,834	
	Part-Time Employment						
1571-000	Clerk (Typing) (O'Neale)	3/1	1	0.5	3,382	858	
	Subtotal		1	0.5	3,382	858	
	Intermittent Employment						
1752-000	Clerk-Typist (Swan)	3/1	1	0.2	1,353	338	
1573-000	Comm. Operator (Turner)	3/1	1	0.9	6,088	1,716	
1573-000	Comm. Operator (Straiski)	3/1	1	0.9	6,088	1,716	
1573-000	Comm. Operator (Scott, M.)	2/1	1	0.7	4,197	1,521	
1573-000	Comm. Operator (Dobbs)	3/4	1	0.7	5,207	1,890	
1573-000	Comm. Operator (Vacant)	2/1	4	1.4	8,394	7,195	
1573-000	Clerk-Typist	3/1	1	0.1	676	520	
	Subtotal		10	4.9	32,003	14,896	
	Total, other than permanent		588	234.6	2,296,848	1,182,588	
	Other personnel compensation						
	Overtime pay				37,503	22,327	
	Holiday pay				46,668	23,397	
	Night work differential				10,628	5,933	
	Sunday differential				50,761	24,171	
	Total personnel compensation				145,560	75,828	

GPO 927-166

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE	1571
DATE	5/9/75
FISCAL YEAR	1976
ACCOUNT NUMBER	- - -

AREA OR OFFICE	Yellowstone National Park
FINANCE OFFICE	Rocky Mountain Region
APPROPRIATION SYMBOL AND TITLE	1461036 Operation of the National Park System
ACTIVITY OR SUBACTIVITY	Park Management

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
	I. Informational entries for wage board increases to become effective during fiscal 1976						
	Estimated full-year cost of wage rate increases anticipated to become effective on September 14, 1975				265,900		
	Current year cost of wage rate increases to become effective during 1976 fiscal year, included in this plan (rounded) (10 months)				166,300		
	Three months for Transitional Period					99,600	
	Balance of full-year cost that will be needed as increases in 1977 fiscal year allowance (2 months)				99,600		
	II. Informational entries for wage board increases to become effective during Transitional Period						
	Estimated full year cost of wage rate increases anticipated to become effective September 12, 1976					265,700	
	To become effective during Transitional Period, included in this plan					22,800	
	Balance of full-year cost that will be needed as increase in 1977 FY allowance					242,900	

NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

NUMERIC CODE: 1571

DATE: 5/9/75

AREA OR OFFICE	FINANCE OFFICE	FISCAL YEAR
Yellowstone National Park	Rocky Mountain Region	1976
APPROPRIATION SYMBOL AND TITLE 1461036	ACTIVITY OR SUBACTIVITY	ACCOUNTING ELEMENT
Operation of the National Park System	Park Management	- - -

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
	Add Personnel Benefits						
	(11% of above "net permanent")				160,086	37,614	
	(11% of above "other than permanent")				223,503	112,038	
	Cost of living allowance				--	--	
	Uniform allowance						
	Permanent				8,355	8,055	
	Temporary				17,136	6,115	
	Total personnel benefits				409,080	163,822	
	Anticipated current cost of wage board increases to become effective between July 1, 1975 and June 30, 1976. 9/14/75 & 9/12/76						
	Personnel compensation						
	Permanent				37,025	12,[illegible]	
	Other than permanent				107,694	93,[illegible]	
	Other personnel compensation				5,700	[illegible]	
	Total personnel compensation				150,429	110,362	
	Related benefits						
	(11% of above "net permanent")				4,007	1,3[illegible]	
	(11% of above "other than permanent")				11,864	10,659	
	Total related benefits				15,871	12,018	
	Total wage board increase cost (personnel compensationa and benefits--report total as wage board informational entry)				166,300		
	Three month transition period					122,400	
	Total personnel compensation and benefits (amount to be included on Form 10-561)				4,438,536	1,892,884	

10-561b
(8)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL BY COST FEATURE

NUMERIC CODE: 1571
DATE: 5/9/75

AREA OR OFFICE: Yellowstone National Park
FINANCE OFFICE: Rocky Mountain Region
FISCAL YEAR: 1976
APPROPRIATION SYMBOL AND TITLE: 1461036 Operation of the National Park System
ACTIVITY OR SUBACTIVITY: Park Management
ACCOUNT N: - - -

COST ACCOUNT NUMBER	COST FEATURE				ORIGINAL PLAN	NET TOTAL OF CHANGES	CURRENT PLAN
Organization Code	PWE	Permanent Positions	M.Y. Other	Dollar Amount	Info. Entries for W.b. Increase	Transitional Period Base Amount	Transitional Period For W.b. Increase
Yellowstone							
1571	105	4	5.0	$ 203,300	$	$ 56,800	$
1571	110	15	20.6	507,100	200	148,500	300
1571	165	1		24,100		7,900	
1571	182	5	1.1	144,400		46,700	
1572	140	6	18.4	342,900		178,700	
1573	160	17	26.3	757,200		301,700	
1573	180	5	20.3	245,100		124,300	
1573	300		2.2	25,500	300	20,300	900
1573	320		1.9	51,800	2,100	18,500	1,200
1574	230	12	60.2	1,202,700	62,500	512,300	47,200
1575	260	11	19.5	1,158,700	61,000	459,000	40,500
1575	280		25.7	362,500	14,500	239,700	22,600
1578	320	9	8.8	816,000	24,000	258,100	8,900
1577	260	2		Not funded on this Program			
1578	450	2					
		76					
Total Yellowstone		92	210.0	$5,841,300	$164,600	$2,373,000	$122,400
Big Hole							
1585	170	1	1.0	31,700		11,800	
1585	230	0	0.5	14,200	1,000	3,900	600
1585	260	1	0.5	14,500	700	5,800	200
Total Big Hole		2	2.0	$ 60,400	$ 1,700	$ 21,500	$ 800
Transition Period Adjustment						- 446,900	
Total		92	212.0	$5,901,700	$166,300	1,947,600	$122,400

FINANCIAL PLAN - OPERATING PROGRAM

OR OFFICE: llowstone National Park, Wyoming	FINANCE OFFICE: Rocky Mountain Region	DATE: 01573 / 04-17-75
OPRIATION SYMBOL AND TIT: 14X5006 (10) and 0 of Recreation Facilities	ACTIVITY OR SUBACTIVITY: Fee Collection	FISCAL YEAR: 1976 / ACCOUNTING PERIOD

COMPONENTS OF COST BY OBJECT CLASSIFICATION	ORIGINAL PLAN	NET TOTAL OF CHANGES	CURRENT PLAN
12 - Personnel Compensation and Benefits (From Form 10-561a)	313,908	164,816	
- Travel and Transportation of Persons			
- Transportation of Things	1,000	100	
- Rent, Communications, and Utilities (Includes GSA Office Space Rental $)	10,500	3,000	
- Printing and Reproduction	12,000	3,000	
- Other Services (Itemize on reverse side)	14,600	5,400	
- Services of Other Agencies (Itemize on reverse side)			
- Supplies and Materials and Non-Capitalized Equipment (Direct Purchases)	12,732	3,184	
- Equipment (Capital Acquisitions - Itemize Below)			
use Trailers (2) 18,000 Depr. of Equip.			
mpground Cycles (3) 3,000 360		Equip. Depr.	
Radios (3) 3,000	27,360	100	
ec. Alarm Equip. 3,000			
- Land and Structures			
- Grants, Subsidies, and Contributions			
- Insurance Claims and Indemnities			
- Depreciation of Equipment			
Equipment Operations			
Storehouse Operations			
- Corral Operations			
Sign Shop Operations			
Manufacturing of Stores and Equipment			
nt needed for July 1 - Sept. 30, 1976		179,000	
stment to bring needs to authorized		- 46,800	
TOTAL AUTHORIZED PLAN	392,100	132,800	

DISTRIBUTION TO	EST. CUMULATIVE OBLIGATIONS BY APPORTIONMENT PERIOD (Quarterly or Tri-Monthly) COMPONENTS	FIRST	SECOND	THIRD	FOURTH
RMR Budget	Personal services (11 & 12)	170,581	202,274	313,908	
	All Other Expenses	13,264	30,828	51,192	
	Capital Outlays (31)	9,000	18,000	27,000	
	Total Authorized Plan	192,845	251,102	392,100	

(Sig. & Title) (Date) CONCURRED (Sig. & Title) (Date) APPROVED (Sig. & Title) (Date)

cting Chief Park Ranger — Superintendent — Regional Director

25.1 Other Services (Detail)		Net Total of Changes
Yellowstone Park Company for collection of fees	$ 500	$ 300
Burroughs	1,000	500
Stores and Imprest	6,600	2,600
Equipment and Shop Operations	6,500	2,000

NATIONAL PARK SERVICE

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL - PERSONNEL COMPENSATION AND BENEFITS

BUDGET CODE: 01573

DATE: 04-17-75

AREA OR OFFICE	FINANCE OFFICE	FISCAL YEAR
Yellowstone National Park, Wyoming	Rocky Mountain Region	1976
APPROPRIATION SYMBOL AND TITLE 14X5006 (10)	ACTIVITY OR SUBACTIVITY	ACCOUNT NUMBER
O and O of Recreation Facilities	Park Operations	1173-[illegible]

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
	Permanent full-time positions:						
573-49	Supv. Park Ranger (Danforth)	11/3	1	.5	8,257	4,192(.3[illegible])	
573-59	Supv. Park Ranger (Miller, M.)	9/4	1	.5	7,063	3,585(.[illegible])	
573-74	Supv. Park Ranger (Johnson)	11/1	1	.5	7,741	3,928(.[illegible])	
573-76	Supv. Park Ranger (Patterson)	9/3	1	.5	6,849	3,480(.3[illegible])	
573-86	Supv. Park Ranger (Blank)	9/3	1	.5	6,849	3,480(.3[illegible])	
573-88	Supv. Park Ranger (Mernin)	11/3	1	.5	8,257	4,192(.3[illegible])	
573-78	Supv. Park Ranger (Koehn)	9/3	1	.5	6,849	3,480(.3[illegible])	
573-96	Supv. Park Ranger (Orgill)	9/5	1	.6	8,732	3,696(.[illegible])	
573-55	Supv. Park Ranger (Olson)	9/3	1	.5	6,849	3,480(.3[illegible])	
573-90	Supv. Park Ranger (Rudolph)	11/1	1	.5	7,741	3,928(.[illegible])	
	Total Permanent		10	5.1	75,187	37,441(3.[illegible])	
	Deduct Lapses (6%)			.3	4,511		
				4.8	70,676		
	Add Regular Pay Above Annual Rate (2/260 of Total Permanent)				544		
	Net Permanent				71,220		
	Positions other than permanent:						
	Park Rangers (General)	6/1	16	3.8	35,997	25,577(2.7[illegible])	
	Park Rangers (General)	5/1	20	11.2	95,200	43,350(5.1[illegible])	
	Park Rangers (General)	4/1	22	6.1	46,336	28,105(3.[illegible])	
	Park Aids (WAE)	2/1	5	1.2	7,195		
	Total other than permanent		63	22.3	184,728	97,032(1[illegible].5M)	
	Other personnel compensation:						
	Overtime pay				3,500	1,700	
	Holiday pay				7,900	5,000	
	Night Differential				4,700	3,000	
	Sunday Differential				8,300	4,600	
	Total other personnel compensation				24,400	14,300	
	Total personnel compensation				280,348	148,773	

GPO 927-162

FINANCIAL PLAN - OPERATING PROGRAM

DETAIL OF PERSONNEL COMPENSATION AND BENEFITS

	01573
DATE	04-17-75

AREA OR OFFICE	FINANCE OFFICE	FISCAL YEAR
llowstone National Park, Wyoming	Rocky Mountain Region	1976
APPROPRIATION SYMBOL AND TITLE 14X5006 (10) and O of Recreation Facilities	ACTIVITY OR SUB-ACTIVITY Fee Collection	ACCOUNT NUMBER 15[illegible]

POSITION NUMBER	DESCRIPTION	GRADE GS-	NO.	MAN-YR.	ORIGINAL PLAN AMOUNT	NET TOTAL OF CHANGES	CURRENT PLAN
	Add Personnel Benefits:						
	(11% of above "net permanent")				7,834	4,119	
	(11% of above "other than permanent")				20,320	10,674	
	Uniform Allowance						
	Permanent				1,250	1,250	
	Temporary				4,156		
	Total Personnel Benefits				33,560	16,043	
	Total personnel compensation and benefits				313,903	164,[illegible]	

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A-N-N-U-A-L R-E-P-O-R-T

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YELLOWSTONE
NATIONAL PARK
LIBRARY
9201

John A. Townsley

John A. Townsley, Superintendent

Date: January 21, 1977

C-O-N-T-E-N-T-S

VISIT OF PRESIDENT GERALD R. FORD

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VISIT OF

PRESIDENT GERALD R. FORD

August 29, 1976

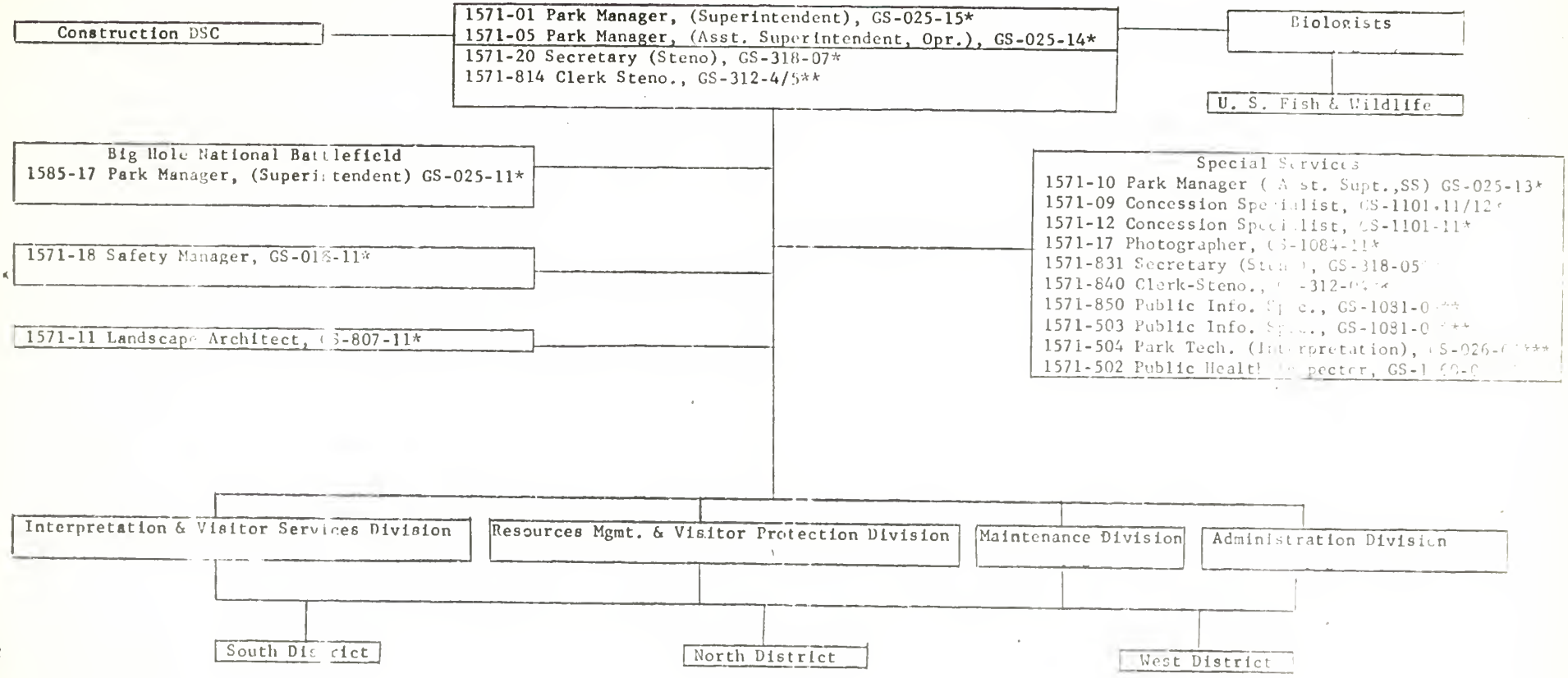
On Sunday, August 29, 1976, President Gerald R. Ford visited Yellowstone National Park. The purpose of his visit was to announce his proposal for a "Bicentennial Land Heritage Act," a ten-year program to fund many park and recreation needs and to greatly expand the National Park and Wildlife Refuge Systems.

He arrived in West Yellowstone at 12:30 p.m. and flew from there to Old Faithful. His speech lasted about fifteen minutes and was interrupted briefly by the eruption of Old Faithful Geyser. His remarks and proposals were well received by the crowd of about 6,000.

The President flew to Canyon after the speech for a picnic lunch with some old friends from his 1936 Ranger days. A barbecue lunch was prepared at Old Faithful for the many dignitaries who were present for the speech.

By 3:30 the President, accompanied by his daughter Susan and son Jack, had returned to West Yellowstone and reboarded Air Force One.

ORGANIZATIONAL CHART
YELLOWSTONE NATIONAL PARK



*Permanent
**Subject-to-Furlough
***Seasonal

SEPARATION SHEET Yellowstone NP
Archives

Type and Number of Item(s) (map, newspaper, clipping, photograph, etc.)

5 color photographs

Description of Item(s) (include dates, names, topics, etc.)

- President Gerald Ford's visit
- frosted trees
- See photocopies

Condition of Item(s) FAIR - labels, spiral binding holes

Item(s) Originally Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

1976 Superintendent's Annual report

Item(s) Now Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

photo archives

Separated by (name, title, and office) A. Cherry

Separation Date: 7-3003

Frosted Trees - Lower Geyser Basin
Yellowstone National Park

Mrs. Isabel Haynes and Group of
President Ford's 1936 Ranger Associates
Who Attended the President's Barbecue.
Artist Point, Yellowstone National Park

1. ADMINISTRATION

A. Personnel

During 1976, 314 employees attended training courses. Two Two Civil Service Commission courses were presented on site and 8 other on-site courses were presented by National Park Service employee instructors.

In May 1976, the park received classification authority for all Wage Grade, Wage Grade Supervisors, and Classification Act positions through GS-9 (except the 301 and 200 series).

A complete audit of all positions at Yellowstone National Park is planned. Twenty percent of the audit of permanent, subject-to-furlough and part-time positions has been accomplished.

The Official Personnel Folders, which formerly had been maintained in the Regional Office, were returned to the park for maintenance. A special room was built in the Personnel Office for safekeeping of these files.

Instead of local recruitment for seasonal employment, the Rocky Mountain Region Referral System was used in filling seasonal positions. Mike Graebner, Personnel Officer, was detailed to the Regional Office for approximately three months to set up the computerized seasonal hiring procedures.

The Referral System was utilized on a trial basis, and several of the problem areas in the System have been eliminated. It is expected that the System will work smoothly next season. As a result of the Personnel Officer's work on the Referral System, he was selected for reassignment to the Washington Office, with duty station at the Rocky Mountain Regional Office, for a permanent assignment as Personnel Staffing Specialist in charge of the Seasonal Referral System.

Mr. Daniel I. Duran was selected to replace Michael Graebner as Personnel Officer. Mr. Duran is transferring from the Veterans Administration Regional Office in Albuquerque, New Mexico, and will report for duty on January 17, 1977.

I. Administration

A. Personnel (con't)

A complete audit of the Personnel Office was accomplished. The position of Assistant Personnel Officer was abolished, and rather than accepting a change to a lower grade, Mr. Edwin Chamberlin chose involuntary retirement. He retired after 25 years of service.

An Annual Appraisal System was implemented in January 1976 for Subject-to-Furlough and Part-time, as well as Permanent employees. Prior to this date, these employees had not received Annual Appraisals.

B. Awards

Nine Special Achievement Awards totaling $1,750; two Superior Service Awards (Quality Increases), and one Honor Award for Superior Service. (See Appendix I)

C. Union Management

New Union Officers were elected in 1976 and the regular monthly meetings between Labor and Management were continued. These meetings provide a very useful exchange of information and concerns.

D. Equal Employment Opportunity

The seasonal employment goal for minorities was not met this year. A concentrated effort was made to hire minorities; however, we received many declinations which resulted in only 17 minority seasonal hires. Sixty-eight women were hired in a variety of seasonal positions such as Laborers, Motor Vehicle Operator, Maintenance Worker, Park Aid and Park Technician.

A breakthrough in employment of women was accomplished during the year with the employment of women in the following positions: Park Ranger (General), GS-9; Park Ranger (Naturalist), GS-9, and Personnel Management Specialist, GS-9.

A new EEO Committee was selected this year. Instead of members being appointed, an election was held and one member was elected for each district and division.

A. Administration

D. Equal Employment Opportunity (continued)

An election was also held for Federal Women's Program Coordinator. Vivian Bekemans, Secretary to the Chief Park Ranger was selected.

E. Budget and Finance (Programs)

Funding - Yellowstone National Park - FY '77

General Management and Administration (including research expenses and safety)	$1,029,000
Interpretation	375,100
Resource Management and Visitor Protection	1,280,800
Maintenance of Buildings, Utilities and Grounds	1,800,700
Motor Vehicle Operation and Replacement	961,900

Budget and Finance (Administration)

Fee Collections	342,100
Educational Expenses - Children of Employees, Yellowstone National Park	295,000
*Quarters Maintenance and Operation (financed from rents paid by employees)	260,000
*Sanitation Collection and Disposal (solid waste)	86,000
*Water and Sewer Expense (Portion paid by concessioners and quarters)	68,000

*Not financed from appropriated funds. The government's share of the cost of operation of utilities is included in Maintenance of Buildings, Utilities and Grounds.

I. Administration (continued)

F. Concessions

In January 1976, plans were formulated for a special study to view concession problems in Yellowstone National Park. The Study Team was appointed in February and the Yellowstone Concessions Review began officially on February 13, 1976. The work was started at that time so that the winter operation could be analyzed and the Team on hand to view opening procedures in the various facilities. The Study Team remained active throughout the summer, and finalized their recommendations at the close of the season. The Yellowstone concession staff is working with the concessioners to implement this report.

Yellowstone has increased its staff to deal with the concessioners in future operations. There is now a Concession Specialist working under the Assistant Superintendent, Special Services.

Concessioners:

The year 1976 was a record one for the concessioners. There was a total of 569,336 overnight guests representing an occupancy rate of 72.4 percent, compared to 551,462 guests and an occupancy rate of 72.4 percent in 1975. The facility with the greatest overnight attendance was Canyon Village with 130,655 overnight guests; however, Old Faithful Inn had an 87.7 percent occupancy rate, the highest in the park. The Old Faithful area had 210.053 overnight guests.

There was a total of 1,300,183 guest meals served by the Yellowstone Park Company compared to 1,298,433 last year.

Although the above figures are reflective only of the Yellowstone Park Company, the overall trend for all concessioners is up. The Yellowstone Park Service Stations estimate an approximate 9 percent increase in gasoline sales, while Hamilton Stores, Incorporated report a ten percent increased

II. INTERPRETATION AND VISITOR SERVICES

A. General Interpretation

The newspaper tabloid for advertising the interpretive program activities in Yellowstone was used again this past summer with success. The newspaper "Yellowstone Explorer" was printed four different times during the summer from June through September to advertise the progressive changes in the summer program. A total of 670,500 copies were made available to the public. Feature articles and pictures were included along with the program of activities and list of concession facilities available. Flexibility was the keynote of this method of laying out a summer program for it allowed each district to experiment with new programs, drop those which were not successful, and continually improve those which were retained. Several small refinements were incorporated in this year's copy which proved worthwhile. Park Technician Susan Sindt acted as editor for the entire summer and did an outstanding job for which she received a superior achievement award for her work. Contract for printing of the newspaper was with the Livingston Enterprise.

The system of limited range roadside radio transmitters was used for the fourth season at 1606 KHz. A percentage of down time was still a problem due to the fragile nature of the continuous tape and cartridge system. The new solar powered unit added at Steamboat Point in 1975 proved to be a very efficient trouble free unit.

The rehabilitation of Room J in the Mammoth Museum building as a recording studio and storage for the master slide file proved to be very advantageous. Missing yet to complete the equipment is an electronic mixer unit to tie the two Sony tape recorder units together in a more useable system. We were able to professionally make master tapes and duplicate them for use in the park with this efficient facility.

The mobile car radio transmitter continued to be used successfully to lead interpretive auto caravans and for stationary broadcasting at special points of interest. This technique was especially useful for interpreting natural fires to the visitor. The Winter Camera Safari was continued

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

again for the second year in cooperation with the Gardiner Chamber of Commerce, using the car radio to lead caravans to Cooke City, Montana, through the winter range of the bison and elk.

The Division again assisted the Yellowstone Park Transportation Company with the training of bus drivers and monitoring of them and commentators during the summer season. As a result, these employees were better informed about the park in dealing with the public and better motivated to use the park wisely.

The orientation training program for seasonal interpreters was intensified this year to include more on-site practice in interpretive techniques, particularly for new seasonals. A special Conservation Energy Workshop prepared by the National Recreation and Parks Association was presented to all the seasonal interpretive staff by a team from this organization following the regular training program.

Communications Specialist Bill Lewis continued his intensive monitoring and training of new seasonal naturalists.

Two changes in division staffing occurred during the year. The Museum Curator position was filled in February by Ms. Charleen Nichols and Old Faithful Sub-District Naturalist Al Hendricks transferred to Jewel Cave National Monument in June and was replaced in August by Margaret Short from Colorado National Monument. Secretary-Stenographer Lesa Lyon resigned her position in December. In November, West District Naturalist Dave Pugh was reassigned to the South District. Joe Halladay was reassigned from South to West District. Dave was selected for Mid-Level Management Training, to continue for two years while he remains on the job.

The position of Geothermal Specialist, GS-06 was reclassified to Geologist GS-07. Rich Hutchinson was promoted to the new position, and now reports directly to the Chief Naturalist.

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

Four seasonal employees; Susan Sindt, Jean Merriman, Jim Lenertz, and Jeremy Schmidt received cash awards for special achievements.

The Yellowstone Institute was launched this past summer offering seventeen one-week courses in various subjects for credit, or not, through the Universities of Montana and Wyoming, the State Universities of Idaho and Montana, and Ricks College. Enrollment varied from one to eight students per course with thirty-two students taking a total of forty-nine seminars. There were no students for five of the seventeen courses so these were cancelled. The Institute lost money primarily because of a late start in working up the curriculum coupled with inadequate advertising. The Institute had a salaried Director headquartered at Mammoth Hot Springs using the park resources as the field laboratory. The entire venture was sponsored by the Yellowstone Library and Museum Association in cooperation with the National Park Service. The Board of Trustees of the Association and Park Management have agreed to sponsor the Institute for one more year, offering no more than a total of fifteen courses to see if it cannot overcome the shortcomings that were inherent in last year's program and have it operate on a paying basis.

A series of six employee seminars with guest lectures were again held during the past summer at the Grant Village Visitor Center with repeat sessions at Mammoth Hot Springs. Subjects included fungi, mosquitos, grizzly bears, glaciology, flora of Yellowstone and geothermal activities of the park. Several of these were opened to the public which proved unsatisfactory since ingress and egress of non-interested individuals became too disrupting to the speaker. It is planned to continue these seminars in 1977 as a valuable training aid for seasonal naturalists and other interested employees, but excluding public participation.

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

An audiovisual technician was again hired this past summer to provide slide duplicates to the Naturalist staff as needed with a long range goal of reorganizing the master slide files here in Mammoth. This technician also duplicated interpretive continuous tape radio messages and performed both of these duties under the direction of the Museum Curator.

In lieu of a permanent historian, a seasonal historian was employed during the winter months to catalog, index, and microfilm the administrative reference collections. This has been accomplished for these collections up through the U. S. Army era of 1918 and five duplicate microfilm copies made of the original. These copies will be sent to Harpers Ferry Center, Record Center in Denver, and the remainder will be available for sale to Universities who may want to purchase a copy. Also all the administrative reference collections have been properly stored and labelled in museum record storage boxes so this project has been completed.

B. District Interpretive Activities

Mammoth: The Mammoth staff consisted of seven seasonal naturalists, plus one supervisor who was also Acting North District Naturalist during the summer season. The Mammoth Visitor Center was open daily throughout the year, but manned regularly on a scheduled basis during the period May 15 to October 31. Visitor Center attendance was 176,878 and the audiovisual program was presented 2,651 times to 45,912 visitors.

A Backcountry Planning room was set up with maps and pamphlets in the Visitor Center for use by backpackers to plan their trips before applying at the information desk for a backcountry permit. This has proven to be a very successful way to handle this type of visitor traffic.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

A number of readjustments and changes were made with the museum facilities and some of the exhibit material to provide a better system of accommodating the visitor. The Information Desk was improved, a new "Touch and Feel" table was made and relocated, and many minor housekeeping improvements were accomplished due to the conscientious effort of the Museum Curator.

Interpretive activities offered at Mammoth included the Upper Terrace and Serendipity Walks attended by a total of 1,688 people. The Fort Yellowstone Walk offered four nights weekly was attended by 885 visitors. Evening programs offered nightly at the Mammoth Campground and five nights at the Mammoth Motor Inn and six nights a week at the Indian Creek Campground were attended by 22,882 visitors. Both the Chief and Assistant Chief Park Naturalists were in the schedule this summer and each gave one evening campfire program per week.

Two new programs were offered out of the Mammoth area which proved to be successful. One was a Fly Fishing Demonstration once a week. This particular activity was moved up from the Lake Area since the individual giving it had transferred from the South District. The other program was "Voices from Yellowstone's Past" a dramatic account of Yellowstone's historical development from the time of the mountain man to the present day. This Bicentennial pageant which involved dialogue between five characters, a mountain man, an early explorer, a soldier, a park visitor, and a present day ranger was given 27 times at all campgrounds except Bridge Bay, Slough Creek, Lewis Lake, and Pebble Creek. It was also presented once near Old Faithful Geyser, at the Lake and Mammoth Hotels, in a natural amphitheater near Old Faithful Inn, Roosevelt Lodge, and in the woods at Madison Campground. The smallest crowd was 80 people at the Canyon Amphitheater, and the largest crowd was 6,000 on August 29th at Old Faithful when the program was given prior to the speech by President Ford. This program was financed with the help of Bicentennial

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

money but it is hoped that we can somehow continue to present this pageant as part of the 1977 interpretive program.

Norris: The Norris Sub-District staff consisted of five seasonal interpreters, including one seasonal Sub-District Supervisor. The visitor season ran from late May through September. The museum remained the focal point of activity with visitation estimated to exceed 295,000 people. Six daily guided basin walks were given to 20,470 people. Nine Monument Geyser Basin walks were offered to a total of 95 people but with such low attendance this walk was discontinued in August and we tried several new ones. A walk in Elk Park was given twice a week, one morning and one afternoon, for a total of 5 walks with 41 people. An early morning walk to Ice Lake attracted 11 people on 2 of these walks. An afternoon stroll into the Artist Paint Pot area was a real crowd pleaser with 130 people attending 4 of these walks. An all-day trip to Grizzly Lake yielded 26 people with 3 tries. Campfire programs were offered each evening for a total of 7,402 people. Approximately 15,674 roving contacts were made in the Roaring Mountain, Norris Soldier Station, Artist Paint Pots, and Beryl Springs Areas.

Tower Falls: Two seasonal naturalists served the Tower Falls area presenting nightly campfire programs at the Tower Campground to 5,252 visitors. The popular Fossil Forest hike up Specimen Ridge was given three times per week to 708 people. Roving interpretive duty in the Calcite Springs, Petrified Tree, Tower Fall Campground, and Tower Fall Overlook areas amounted to 20,214 visitor contacts.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Old Faithful: The interpretive staff of the Sub-District consisted of nineteen employees, including the Acting Sub-District and Assistant Sub-District Naturalists and the park's Geothermal Specialist. The permanent Sub-District Naturalist (GS-9) position was vacated in early May when the incumbent transferred to Jewel Cave National Monument. This position was not filled until mid-August.

Several elements differentiated the 1976 summer staff from that of previous seasons.

The 1976 staff included no Park Aids or Information/Receptionists. Rather, the entire staff consisted of GS-4 or 5 Interpretive Specialists. The staff also included a Laborer, WG-2. This position, considered an experiment, was responsible for several programs. First, the position was the "key man" for the solution of what could be termed "interpretive maintenance." Maintenance concerns such as interpretive signs, roadside AM radio transmitter, audio-visual equipment, etc., were within the responsibility of this position. In addition, this position/employee experimented with several maintenance oriented interpretive programs. The Mounted Patrol Ranger, a position funded by both the Protection and Interpretive Divisions was, unlike the 1975 season, under the direct supervision of the Sub-District Ranger. It was felt that the position would fulfill the functions of Visitor Services best in its principal role of Patrol Ranger.

Old Faithful Sub-District's summer interpretive operations began approximately May 1 with the opening of the Visitor Center, which, for most of the summer, was open 13½ hours per day. Even though formal interpretive programs began soon after the May 1 opening, full scale operations did not begin until after the 1st of June. On a decreasing scale following Labor Day, formal programs continued through October 15. Interpretive programs were conducted in the general locations within the Sub-District; Madison Junction and the Old Faithful area and surrounding geyser basins.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Generally, programs presented in the Madison Junction area were afternoon and early evening guided walks, and talks and demonstrations (e.g., backpacking demonstrations) and nighttime campfire slide shows. Total attendance to the 204 programs offered in the Madison Junction area was 27,163 park visitors. The average attendance at Madison programs was 133 visitors per program. The Madison campfire programs experienced the highest average attendance with 177 visitors per program. The campfire programs were offered from early May through October 15. The Madison Trailside Museum was open from May 1 through October 31. The Museum experienced an estimated visitation of 62,000. An estimated 24,000 visitors made use of the recorded audio Bicentennial message presented at the Museum.

Interpretive programs conducted in the Old Faithful area ranged from guided walks, demonstrations, film programs, evening slide programs, to overnight backpack trips, to historical tours of Old Faithful Inn. All told, 625 formal interpretive programs were offered during the summer season with 26,676 park visitors taking part. Visitation at the Old Faithful Visitor Center totalled 776,850, representing an increase of 17% over the 1975 season. The Center's nine minute film "Yellowstone, A Living Sculpture" was shown approximately 4,286 times to an audience total of 294,450. Roving interpretation, conducted in the Upper, Midway and Lower Geyser Basins, accounted for 16,869 visitor contacts during 151 days.

For the first time this year the Old Faithful Interpretive Staff was responsible for the operation of the Sub-District's backcountry use office and the issuance of Backcountry Use Permits. To facilitate this new responsibility, a portion of the Visitor Center's office space was remodeled into a backcountry office. All indications are that this operation functioned very well.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Several interpretive experiments or new program ideas were presented in the Sub-District this season. A combination slide program/guided walk which dealt with the Old Faithful Inn was presented for the first time this summer. By all parameters, this program (Historical Tour of Old Faithful Inn) was a success. This success was, to a great degree, the result of the substantial support we received from the Yellowstone Park Company and the staff of the Inn. Another experiment was the offering and presentation of interpretive programs (guided walks) for foreign visitors. These programs were presented in two languages, French and German, by a volunteer who worked for one of the park concessioners and is a citizen of Great Britain. Even though these programs were only offered during August and on a twice a week basis, and averaged only eight visitors per program, it is believed that the park is, and increasingly so, experiencing foreign visitation at a high enough rate to warrant special interpretive programming. Efforts will be made for the 1977 season to recruit bilingual Interpretive Specialists.

A wildlife auto caravan was presented during September and October on a twice a week basis. The caravans met less-than-hoped-for success; faulty radio equipment and good weather (bad weather would have been better, because it would have brought wildlife to lower elevations and closer to the roadways) did not help make the program succeed. Stream Ecology Walk and Bike Hike were two other new programs this year. Their success warrants continuation during the 1977 season.

The Old Faithful Sub-District's winter season started mid-December and continued into the third week of March. The winter staff consisted of the Sub-District Naturalist, the park's Geothermal Specialist and one seasonal Park Technician (Interpretive Specialist). Winter interpretive programs were guided walks, evening slide programs presented in the Visitor

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Center's auditorium, and presentations of the film, "Yellowstone, A Living Sculpture." The winter visitation totalled 15, 572 for 86 days of operation, representing an increase of 12%. Because of budgetary restrictions, the resident interpreter staff at Old Faithful was reduced by two seasonal positions during the 1975-76 winter season. In order to continue the interpretive standards at Old Faithful, the permanent interpretive staff stationed at Mammoth was scheduled into the operation. This involved an employee from Mammoth traveling to Old Faithful each week and working a Friday-Monday schedule. The cost of this operation was an estimated $1,000.00 above normal salaries. Other costs, such as continuity of interpretive programs and inflexibility should also be included. And finally, the effect of pulling the permanent staff of Mammoth away from their normal duties and responsibilities must be included in the overall cost of this type of operation. In review, it is felt that the quality of the winter interpretive operation at Old Faithful was less than that which would have existed had the operation been conducted completely by a resident staff.

Grant Village: The interpretive staff of the Sub-District consisted of seven seasonal Park Technicians (Interpretive Specialists), including the Sub-District Naturalist. The staff was increased this year from six to seven employees. The seventh position was added because a strong Bicentennial effort was made within the Sub-District. One of the benefits of this effort was that evening campfire programs were presented nightly at Lewis Lake Campground for the first time this year.

General Discussion - West District: With the special effort made in Yellowstone this summer for the Bicentennial, several "one-time-only" programs were conducted. One of these was

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

the installation of two listening chairs in the Madison Trailside Museum. Even though no special effort was made to monitor the level of use of these facilities, personal observations indicated a very high, if not continual use. The recorded message, which dealt with the conceptual relationship between the creation of this nation 200 years ago and the creation of Yellowstone 100 years ago, received many favorable verbal comments.

This was the second season during which the park made use of the "Yellowstone Explorer" as a means of publicizing interpretive programs. The use of this newspaper and its relative value in reaching the public is extremely difficult to measure; however, several specific interpretive programs and their success can be directly attributed to the "Explorer." One of these programs, a weekly, overnight, naturalist-led backpack trip experienced an average attendance increase of almost 100% over the 1975 season. This particular program received feature story coverage in several bi-weekly issues. There is no doubt as to the affect of this coverage on the program's success.

Probably the most significant single event to take place in the West District this summer was the Presidential visit during August. The role of interpretation during the visit was primarily one of public relations. It is significant, however, that during the visit, all normally conducted interpretive programs were not interrupted and program attendance remained approximately the same. During the three or four days preceding the President's visit and the visit itself, a total of 38 members of the interpretive staff took part. The roles of these interpreters ranged from interpretive/escorts traveling with "Press Buses," Interpreter/Drivers for VIP's, park liaison with Department and Bureau media people, to general roving interpretive duty immediately before and during the Presidential visit.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Mt. Washburn Lookout: Dick and Margie Fey returned to operate the lookout again this year. Their performance was excellent reflecting the fact that they had prior experience. The groups attending the naturalist led hikes over the old road from Dunraven Pass picnic area were permitted to enter the tower again this year. Being in the lookout cab, as well as learning about the free-burn policy, is one of the great highlights of the trip. Buses did not run on Mt. Washburn this year, but it was a popular hiking area. A total of 4,000 hikers visited the lookout, which was a 7.6% increase over last year. A new message was developed for the information radio located at the parking area for the north slope trail. The message gave information to hikers on how to adequately prepare for the hike. An environmental message was included drawing attention to the fragile nature of the alpine slopes.

Canyon: The Canyon Visitor Center was open daily from May 21 through October 17. Visitation increased considerably again this year with 316,736 visitors entering the Visitor Center. This is a 7.4% increase over last year. The interpretive staff consisted of ten seasonal naturalists, including one supervisor and one assistant supervisor. It was necessary to schedule two people to tend the information desk at all times. This put a heavy demand on the available manpower and it became obvious that the staff should be increased in this area. Additional quarters also are needed to facilitate related housing requirements. The Youth Conservation Corps camp was located at Canyon offering additional opportunity for the naturalist staff to promote environmental understanding and ethics. Special programs were conducted for two separate groups of International Travel Writers. This was a rewarding personal experience as well as a special opportunity for cultural exchange.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities (continued)

Fishing Bridge-Bridge Bay: The Fishing Bridge Visitor Center was open daily from May 28 through September 23. Accurate attendance figures are not available, but the visitation increase is estimated at about 6%. The interpretive staff consisted of eleven seasonal naturalists, including one supervisor and one assistant supervisor. The illustrated talks at Lake Yellowstone Hotel were increased to five nights per week with over-capacity crowds every night. The Yellowstone Park Company installed a partition to separate the assembly room from the other activities in the hotel lobby. This situation is a very effective improvement. The effort to present interpretive and environmental films at the hotel via a video-cassette transmitting system was unsatisfactory. Conditions must be developed whereby a stronger signal is relayed to the monitors in the hotel. The staffs of both Fishing Bridge and Canyon were called upon frequently to give special programs for university groups and other organized groups. In these sessions interest is acute and many questions deal with park management philosophies and policies. A closer communication was developed this year with the concession employees through the presentation of several seminars, and demonstrations such as backpacking and canoeing.

The District-wide program was greatly enhanced by the Assistant South District Naturalist. That position was filled by Harlan Kredit who is an outstanding individual in terms of talents and in working with people. In addition to other duties, he submitted several hundred slides to be evaluated for inclusion in the park master file. The roadside information radio system showed improvement this year, but many problems still plagued the regular A-V equipment. Several new conducted programs were initiated this year including such activities as a canoeing demonstration, a teepee demonstration, orienteering, fish ecology, environmental awareness, plants and early man, and discussions on bears. We enjoyed a generous amount of assistance from several Volunteers again this year. In all it was a very busy and tiring year, but very rewarding.

YELLOWSTONE
NATIONAL PARK

Big Hole National Battlefield

Yellowstone continues to provide staff and technical assistance to Big Hole National Battlefield with large maintenance projects, interpretation, resource evaluation, and planning.

Through the help of the Yellowstone Library and Museum Association the Siege Trail leaflet was revised and printed for use during the 1976 season. Planning assistance was provided by the park interpretive staff in the revision of the existing museum exhibits and preliminary planning for the new Indian Encampment trail prior to the centennial of the Battle of Big Hole in 1977.

Yellowstone Library and Museum Association

The Association made a gross income of $210,337, a net of $49,088 for an increase of 25 percent over 1975. Donations to the National Park Service totaled $57,674 for the year. The Association now operates two branch operations, Grant-Kohrs National Historic Site and Big Hole National Battlefield, and donates funds toward acquiring needed historic material for their use. Donations in Yellowstone covered free publications, microfilming historic records, operation and development of the research library, and purchasing materials for living history.

A major undertaking of the Association was to organize and finance The Yellowstone Institute. Due to a late start, the Institute attracted few students and sustained a net loss of $6,480. The Board of Trustees agreed to back the Institute for at lease one more season.

III. RESOURCES MANAGEMENT AND VISITOR PROTECTION

A. Law Enforcement

As in the past, crimes against property are the major type of criminal activity in Yellowstone National Park, and it is felt that a reservation system and more persons directly involved in campground management and supervision, on a day-to-day basis, could help in bringing this problem under control.

There were many rumors this year that we had some large-scale drug dealing within the park. The Law Enforcement Office felt that this was probably an exaggeration and so, with the cooperation of the Federal Bureau of Investigation, two undercover drug operations were undertaken which resulted in the arrest of one small opportunist-type drug pusher and finding that there was very little actual drug dealing within the park by individuals and that a few sold drugs occasionally from their own personal supplies.

The FBI provided a resident agent for the park from July 7 until Labor Day, thereby helping the investigative capabilities of the park. Four agents were assigned in rotating shifts throughout this period. This system, while providing investigative coverage, also allowed more agents from the Butte Office to become familiar with the park and its law-enforcement problems.

The United States Attorney also rotated his staff on two-week assignments in the park over the same period so that they might become better acquainted with our problems and the help they might provide us.

Also, during the summer, the General Accounting Office performed an informal audit of the law-enforcement program. In the preliminary report from them, there seemed to be three main areas of concern: First was what they considered a lack of sufficient training of Seasonal Rangers for law enforcement. Second was the lack of adequate followup in law-enforcement recordkeeping. And third was a concern that we might do more with the public through a crime-prevention program.

III. RESOURCES MANAGEMENT AND VISITOR PROTECTION

With the passage of the new Law Enforcement Authorities Bill, the Law Enforcement Office has begun to work on the problem of reassigning seasonal personnel with law enforcement training, the training of new seasonals in law enforcement, and the retraining of those already qualified.

B. Regulations

No changes were made in fishing regulations in 1976, nor are any changes contemplated for 1977. Current regulations are either accomplishing the desired result or need a longer period of evaluation to detect any change trends in the fishery resource.

C. Tort Claims

We have been advised by the Interior Department Solicitor's Office that the decision on the Walker bear case, decided in favor of the plaintiff last year, was reversed by the Ninth Circuit Court of Appeals, in Los Angeles, in favor of the United States.

There is some indication that Melvin Ford, injured by a grizzly in Fishing Bridge Campground on August 17, 1976, may file a claim.

D. Weather Conditions

The winter, spring and summer months saw slightly warmer than normal temperatures and close to normal precipitation. Until mid-April, icing conditions on the northern range made grazing extremely difficult. The fall was very dry, with the December snow courses recording some of the lowest snow depths and water contents on record. Lack of snow necessitated restrictions on snowmobiling through the end of the year.

E. Fish and Wildlife Management

An upsurge of bear activity, which apparently occurred throughout the Rocky Mountain area, was felt in Yellowstone through both injuries and damage incidents by black and

grizzly bears. Two backcountry hikers and two campers at Fishing Bridge were injured by grizzlies and four visitors were injured by roadside black bears. One grizzly was destroyed in a control action and there were fourteen transplants. There were three control kills of black bears, one vehicle kill and thirteen transplants.

The U. S. Fish and Wildlife Service proposal for the establishment of grizzly bear critical habitat was discussed at several public hearings in the area. There was considerable opposition to the proposal, probably because of a lack of understanding of the kind of restrictions that might be applied.

Winter movements of elk across the north boundary prompted a post-season hunt in the Gardiner area early this year. The hunting periods were arranged to accommodate 125 hunters on Friday and Saturday of each week, and another 125 hunters on Sunday and Monday, with the intervening three days as a rest period. The post-season was in effect from January 9 through March 8, during which period 1,120 elk were taken, with an overall success ratio among participating hunters of 87 percent. The State of Montana operated a check station at Corwin Springs at which each hunter attended an orientation program emphasizing sportsmanship. As a result, there were very few illegal or unsavory incidents such as have characterized such hunts in past years.

In January, because of severe icing conditions on the northern range, bison began drifting down the Yellowstone Valley toward the north boundary. Eight bison crossed the boundary near Gardiner, Montana, and were dispatched by state personnel, with the meat being sold at public auction. This was a cooperative action as part of our boundary-control program. Bison continued to move down the Yellowstone, and on February 11, twelve animals reached the outskirts of Gardiner.

Because of the unusual winter conditions precipitating this movement, it was decided to push the bison back into the park rather than slaughtering all those approaching the boundary or leaving the park. With the timely help of

U. S. Forest Service personnel, the bison were herded by foot, horse and snowmachine for the next few days, and helicopters were obtained for more intensive herding. Barricades were erected on the Yellowstone River trail, which most of the bison were using, and the herding operation over the next six weeks held the bison east of the barricades. By mid-April, all bison were moving back up the river and the barricades were removed.

In a program to reduce lambing losses in the Dillon, Montana, area, the U. S. Fish and Wildlife Service has been live-trapping golden eagles and transplanting them to other parts of the state. Because the golden eagle population in the park was historically greater than at present and because the amount of available carrion in the park was greater than in past years, the park agreed to accept some of these eagles for release in the Lamar Valley. On April 23, the first shipment of 13 eagles was released near the Lamar picnic area. By July 2, a total of 70 eagles had been released at various sites within the park.

F. Wilderness and Backcountry Management

Backcountry use saw an increase of approximately 8 percent over 1975. With an overall travel increase of 16 percent over 1975, this indicates a leveling of the upward trend in backcountry use. Permit issuance increased by about 12 percent, indicating a slight drop in party size. The number of stock continues to decrease, with an approximate 12 percent reduction in horse use from 1975. Word from Washington indicates that we will be using a Servicewide Permit in 1977 in the baggage-tag format. A backcountry reservation system remains in the future.

G. Park Visitation

The park was open for public travel on the traditional May 1 opening date. The Beartooth Highway and operation of the Northeast Entrance were opened on May 21.

Road closures for the winter began on October 15 when the Beartooth Highway and operation of the Northeast Entrance

were closed for the season. The East Entrance was closed for the season on November 16 and the West and South Entrances closed on November 24.

Annual park visitation totaled 2,525,174 persons. This total reflects an increase of 12.4 percent over the previous year. Winter visitation, January through April and November through December, totaled 104,279 persons. This total reflects an increase of 20.8 percent over the previous year during the same period.

H. Entrance and User Fee Collections

Station	Summer	Winter	Golden Eagle Passports	Total
North	$103,884.50	$ 1,752.00	$19,990.00	$125,626.50
West	302,294.00	18,153.00	46,460.00	366,907.00
South	37,896.50	1,171.00	10,260.00	49,327.50
East	238,408.50	307.50	60,570.00	299,286.00
Northeast	59,423.00	---	11,500.00	70,923.00
Total	$741,906.50	$21,383.50	$148,780.00	$912,070.00

In addition to fees collected from Single Visit Permits and Golden Eagle Passports, 17,112 Golden Age Passports were issued free of charge to persons 62 years of age and older.

Campground fees were collected in 14 campgrounds (12 regular plus two group campgrounds) from June 20 through September 11. The amount collected totaled $441,683.50.

I. Special Use Permits

The Visitor Services Office issued 20 Special Use Permits during 1976.

III. RESOURCES MANAGEMENT AND VISITOR PROTECTION

J. Central Communications Center Records Summary

	Year		
	1974	1975	1976
Employee Vehicle Registrations	2,226	2,660	2,525
Visitor Identification Notices	458	638	612
Percent Located	18%	17.6%	25.5%
Backcountry Permits Recorded	5,583	6,365	7,154
No. of People on Permit	16,801	17,994	19,424
Teletype Messages Sent on Law Enforcement Teletype System	1,254	1,152	2,116
NCIC Inquiries	1,022	1,118	809
Law Enforcement Records Checks	1,965	2,013	2,500
All Points Bulletins	25	44	49
Field Interrogation Cards Filed	993	805	662

K. Fire Management (Control and Natural Fire Management)

i. Structural Fires:

Yellowstone was the host for an Inter-Regional structural fire school in the spring and, with the aid of instructors from the Ohio State University Extension Service, trained some 30 key National Park Service and local fire brigade personnel. A reorganization of the forest fire organization placed structural fire inspectors at Lake and Old Faithful for the first time. Fire brigade training took place in all Sub-Districts. Smoke alarms have been purchased and are being distributed. A new 1,000 gallons per minute fire truck was put into service at Lake. Park Rangers from Snake River and Lake responded to a fire at Flagg Ranch in November. Total loss from reported structural fires in the park was approximately $8,000, due to a roof fire at Lake Lodge and a fire in a park employee's residence in Mammoth.

III. RESOURCES MANAGEMENT AND VISITOR PROTECTION

ii. Wildland Fires:

An expanded natural fire program that allows lightning fires to play their natural role was made operational in essentially all of the wilderness of Yellowstone. A Memorandum of Understanding was entered into, with the Bridger-Teton National Forest, concerning natural fires that may cross our common boundary. Plans are continuing on similar agreements with the Gallatin National Forest and the Shoshone National Forest as their natural fire plans are developed.

The fire season was active this year, and was affected by dry weather in July and September and unusually wet weather in August. Thirty fires were reported, and the total area burned was 1,572 acres. Nineteen of the fires were lightning-caused, and sixteen of these were allowed to burn according to the new fire plan. The total area burned by natural fires was 1,520 acres and, of these, 1,500 acres were on the Divide Fire near the South Arm of Yellowstone Lake. Total area burned by the 14 suppressed fires was 52 acres. Suppression costs were approximately $70,000 and monitoring costs were $4,600.

Yellowstone Rangers and Technicians participated in interagency training as students and instructors, as well as in workshops and seminars, at the West Yellowstone Interagency Fire Center, Missoula Aerial Fire Depot, Boise Interagency Fire Center and National Fire Training Center at Marana, Arizona. Nine summer dispatches were made to other agencies or parks to fill fire overhead positions. Yellowstone requested and received fire overhead from the National Park Service Regional Coordinator in Denver and from the Gallatin National Forest for our own fire situation in July. The Boise Interagency Fire Center provided meals and equipment during this same period. The West Yellowstone Interagency Fire Center provided 24 smokejumpers for the Straight Fire and 4 smokejumpers for a rescue. The Center also furnished aircraft for patrol flights, administration, and fire-retardant application

during the fire season. Smokejumpers worked 47 man-days on nonfire project work within the park and, during the Presidential visit, were used for manning fire trucks at Old Faithful and Canyon. Training for National Park Service and U. S. Forest Service people in fire behavior and natural fire monitoring was accomplished as a joint venture with the U. S. Forest Service.

iii. Helicopter Operations

Two Bell 47GB-2 helicopters began flying in mid-February on a bison-control program on the Yellowstone River that continued until March 30. The bison operation involved reconnaissance, ferrying people to expedite herding, the hauling of material for two barricades, and actual herding of the animals. The four-month summer contract for one Bell 47GB-2 and one Lama began June 1. A Bell Jet Ranger was brought in for park use while the Lama was on a fire in the Shoshone National Forest and another Jet Ranger was used for a rescue when the contract helicopter was down for repairs. Search and rescue use of helicopters increased to a total of 72.2 hours of flight time for 17 separate operations. The longest involved 17.1 hours with the Bell at the Teton Dam flood. The shortest took only 0.7 hours with the Lama for a call to Sevenmile Hole on the Yellowstone River. Total use was 481.2 hours for the six different helicopters on contract or under agreement during the year. Outside agencies again helped with guarantees on the contract.

L. Forestry Program

No herbicides were applied for the second year. Four hundred acres were surveyed for Toadflax in the Mammoth area, for comparison of areas of application and non-application to determine the effectiveness of this program. Costs of eradication of exotic plant species would be prohibitive in the foreseeable future, and perhaps Toadflax should be considered a natural part of the environment

like Russian thistle and timothy grass. Eradication by digging continued when isolated plants were encountered in areas other than Mammoth.

Several trees were transplanted from road vistas to the Mammoth area, at the direction of the Park Landscape Architect. Approximately 200 acres of limber pine were pruned for blister rust control in the Mammoth area. Pine beetle surveys continued parkwide, and insect status flights were made by the U. S. Forest Service under a cooperative agreement to map the effects of spruce budworm.

Forestry personnel participated in fire monitoring, fire suppression, and in operating a computer for fire weather information, as well as maintaining maps and records of natural fires.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

M. Research Accomplished

Management Involving Grizzly and Black Bears in Yellowstone National Park 1975-76
Glen F. Cole, Natural Resources Report Number 9
March 9, 1976

Western Spruce Budworm in Yellowstone National Park
Don G. Despain, Information Paper No. 31
June 24, 1976

Hooking Mortality in Trout
Robert E. Gresswell, United States Fish and Wildlife Service, Information Paper No. 29
April 27, 1976

Ecological Rationale for the Destruction of Longnose Suckers in Pelican Creek
Daryl E. Jennings, John D. Varley, United States Fish and Wildlife Service. Information Paper No. 30
June 1, 1976

Other reports written:

Houston, D.G., The Northern Yellowstone Elk Parts III and IV: Vegetation and Habitat Relations. YELL-N-29b, Yellowstone National Park, 444 pp.

Further information on research accomplished in Yellowstone National Park is contained in the Superintendent's Annual Research Report.

IV. MAINTENANCE

A. Buildings

The exterior of 30 buildings in the Mammoth area was painted under contract. A major program of repair of tile roofs was completed in the Mammoth area, and eight buildings were insulated.

Rehabilitation of several buildings was completed, including four units in the Canyon dormitory, a transa-home at East Entrance and the Mess Hall at the Beartooth road camp. Roof repairs were completed on five buildings at Canyon and Madison and the dormitory shower room at Madison was rehabilitated.

A winter exhibit shelter was constructed for the Madison Junction area.

Major repairs, including siding replacement and roof work, were completed at Bighole National Battlefield.

B. Grounds:

Approximately one and one-half acres of lawn in the Mammoth area were landscaped. This work was necessitated due to reconstruction work on sewer lines in the area.

Approximately 350 seedlings including primarily aspen, douglas fir and limber pine, were planted throughout the lower Mammoth residential area in an attempt to begin developing a plant screen.

Research is continuing on development of a comprehensive and economically feasible system of ornamental plant protection from ungulate browsing and fraying damage. Results of last winter's application of a 22 percent solution of TAT-GO, a TMTD animal repellent, were inconclusive, perhaps because of the unusually harsh feeding conditions for ungulates last winter and spring. Additional plants will be sprayed during the coming winter in an effort to provide more substantial data.

C. Utilities

Extensive repair and rehabilitation at the water intakes at Tower Falls, Lamar, East Entrance, and South Entrance

IV. Maintenance

C. Utilities (continued)

was accomplished in compliance with Public Health Service recommendations. The water system at the Otter Creek group campground was determined to be unsatisfactory and was taken out of service. Ultraviolet disinfectant units were installed on the water systems at Lamar, East Entrance and South Entrance. A septic tank and drain field were installed at the Lewis Lake Campground ranger residence. An extension to the Norris Museum septic tank drain field was constructed. A sludge drying bed was constructed at the Canyon Sewage Treatment Plant.

D. Roads and Trails

Extensive paving in the concessioner cabin areas at Old Faithful, Roosevelt Lodge, and Fishing Bridge was completed. A section of road between Norris and Madison was under drained to remove water that was saturating the base and sub-base. Approximately 0.2 mile of resurfacing was completed on the Mae West curve between Tower Junction and Dunraven Pass. Approximately three miles of resurfacing was done in the Cub Creek area on the East Entrance road.

The entrance road at Bighole National Battlefield was resurfaced by Yellowstone crews. In addition, a seal coat was applied to the Siege Area access road, and a section of curbing in front of the visitor center was replaced. The new Nez Perce Camp trail was constructed; also, new and improved Siege Area Trail interpretive markers were designed, constructed, and installed.

E. Construction

Projects completed during the year were the Canyon Rim Lift Stations and Sewage Collection System ($253,400); the Grant Village-West Thumb Lift Stations, Collection System and Disposal Ponds ($350.000); and modifications to the Old Faithful Wastewater Treatment Facility ($31,700). The Old Faithful Wastewater Treatment Facility was completed except for some concrete patching and a Lift Station Compressor ($1,133,500) and the Madison Wastewater Facility was completed in November 1976 with the installation of the new distributor arm for the Trickling Filter ($186,400). This latter facility was not put into full

IV. Maintenance

E. Construction (continued)

operation because of inclement weather, but will be operable next spring. A waterline was replaced at Tower Fall, and this contract has only minor punch list items remaining ($360,500).

A major malfunction of the Fishing Bridge Wastewater Treatment Facility occurred in late July because of massive groundwater infiltration into the old sewerlines. During June, an estimated one million gallons of water were introduced into the system each day because of these old lines. By late July, the percolation ponds at Fishing Bridge were very close to overflowing and had to be drained by other means. To correct this situation, an additional seven and one-half acre lagoon was constructed at a cost of $84,820, by adding a change order to the Lake-Fishing Bridge Contract (total cost is now $1,889,000). In order to correct infiltration in the existing lines, a contract of $260,999 was negotiated to TV inspect all lines in the Lake, Fishing Bridge, and Bridge Bay areas and to pull polyethylene liners through about 8,300 feet of existing sewerlines. The lining was completed this fall and is expected to stop approximately 40 percent of the infiltration that occurred this spring. Next spring it will be determined where the remaining 60 percent of the infiltration is occurring and an additional contract is planned to correct this.

Two Evaporation-Transpiration Sewage Treatment Beds were constructed at Big Hole National Battlefield with negative results ($88,200). It has become apparent that at least one of the beds will not work and the sewage has been diverted to the old septic tank system. Additional construction will take place on this system next spring.

Golden Gate Bridge:

The road through Golden Gate above Mammoth Hot Springs was closed September 7, 1976 to allow for start of reconstruction of the Golden Gate Bridge. The original structure was built in 1883 and rebuilt again in 1901 and 1933. It had deteriorated to the point where it could no longer support heavy vehicular travel. For two years prior to start of construction, one-way traffic on the inside lane only was maintained and controlled by a traffic light.

Sletten Construction Company of Great Falls, Montana was the successful bidder and awarded the contract for $9[illegible],423, with a completion date of June 17, 1977.

V. OTHER

A. Special Events

Yellowstone National Park hosted 54 special visitors, or groups of visitors in 1976, of which 17 were of an international nature.

On Sunday, August 29, 1976, President Gerald R. Ford visited Yellowstone National Park. A separate, illustrated report of the Presidential visit is being prepared at this time for the Yellowstone Research Library.

Mr. Biswa Upreti, probable future Director of the National Parks of Nepal, visited Yellowstone for over a month studying the management and operations of the park.

Four major films were taken in Yellowstone during the year, two of which were international travel documentaries.

Sixteen film permits were issued during the year.

Eugenia Horstman Connally, Editor of National Parks and Conservation Magazine, visited Yellowstone for a few days the first week in September. She conferred with Superintendent Townsley and other park officials and was taken on a trip around the park.

A Bicentennial television audience viewed a live telecast of an eruption of Old Faithful Geyser on the Fourth of July over the NBC Network.

National Park Foundation Backcountry Trip
August 27-September 1, 1976

John Bryant, President of the National Park Foundation and members Homer L. Luther, Jr. and Ernest H. Cockrell toured the Yellowstone backcountry guided by Snake River Sub-District Ranger Gerry Mernin, his wife Cindy, and Packer Foreman Jim Hotchkiss. The group left South Entrance and were met at the Trail Creek Cabin on the Southeast Arm of Yellowstone Lake by National Park Service Director Gary Everhardt, former Yellowstone Superintendents John S. McLaughlin and Lemuel A. Garrison, John A. Townsley, Superintendent, and Robert C. Haraden, Assistant Superintendent. Messrs. McLaughlin and Garrison were in the park for the visit of President Ford and were able to enjoy a trip through the backcountry. Former

V. OTHER

A. Special Events (continued)

Superintendents Jack K. Anderson and Horace M. Albright were unable to join the group.

National Sciences Advisory Committee on Fish and Wildlife and Parks

Assistant Secretary for Fish and Wildlife and Parks, Nathaniel P. Reed, and the National Sciences Advisory Committee on Fish and Wildlife and Parks met in Yellowstone National Park on September 8-12 to discuss topics of concern to the National Park Service and the Fish and Wildlife Service. Management of natural fire, fisheries, and bear management were prime topics.

Advisory Board on National Parks, Historic Sites, Buildings and Monuments

The Advisory Board on National Parks, Historic Sites, Buildings and Monuments to the Secretary of the Interior visited Yellowstone National Park June 8-10 as they traveled through the Rocky Mountain States visiting areas of the Department of the Interior. Among the group were Mrs. Lyndon B. Johnson and Mrs. Rogers C.B. Morton.

On Thursday evening, June 10, the Advisory Board members took the Fort Yellowstone Walk, after which they were hosted at a reception at the home of Superintendent Townsley. Following this, members of the park community welcomed the visitors at a Pot Luck Supper in the historic Canteen Building.

Regional Advisory Board

Rocky Mountain Regional Director Lynn Thompson and members of the Regional Advisory Board were in Yellowstone National Park on September 23. The group remained overnight at Old Faithful Inn and met the following morning to discuss subjects of interest in Yellowstone National Park. One of the major topics of discussion was concession management.

V. OTHER

A. Special Events (continued)

Superintendent and Mrs. Townsley and several staff members and their wives attended the dedication of the solar energized National Park Service visitor center at Lovell, Wyoming on September 25.

B. Media Relations and Public Affairs

Most of the 33 press releases during the year were telephoned to local interests, as well as being mailed for broader coverage. In addition, a Public Service Announcement list was prepared and utilized for brief messages to the visiting public by local radio stations.

Superintendent Townsley was elected to membership on the Board of Directors of the Wyoming Parks and Recreation Association. He was guest speaker at the breakfast meeting of the Association's Annual Conference in Cheyenne, Wyoming on April 23. The title of his talk was, "The National Parks in Wyoming." Following the talk, he was interviewed by a United Press representative.

The Superintendent and Assistant Superintendent Hennesay attended the Annual Montana Snowmobile Convention meeting in Lewistown, Montana the evening of February 4. The theme of the convention was, "Your Snowmobile Dollar and Where It Goes." Mr. Townsley participated in the panel discussion followed by a question and answer period with audience participation.

Superintendent Townsley was a guest speaker at the Red Lodge Area Chamber of Commerce Road Committee meeting on February 10, and the Hotel-Motel Association breakfast on February 11.

The Superintendent and several staff members attended the public hearings on the proposed determination of critical grizzly bear habitat on December 8, 10, and 14 in Cody, Wyoming; Missoula, Montana and St. Anthony, Idaho respectively.

C. Cooperation With Other Agencies

The Superintendent hosted a meeting of the Wyoming State Parks and Recreation Association at Old Faithful on September 18.

V. OTHER

C. Cooperation With Other Agencies (continued)

Regional Director Lynn Thompson hosted the Greater Yellowstone-Teton area meeting with the United States Forest Service Regional Foresters at Old Faithful Inn September 20.

A training session was hosted for 12 staff and field personnel from the United States Forest Service Shoshone National Forest to provide exposure to National Park Service problems and management.

Superintendent Townsley and Chief Park Ranger Estey attended a United States Forest Service-National Park Service fire management meeting in Billings, Montana on January 7. The USFS-NPS Coordination Meeting was held in Billings, Montana on March 18.

D. Energy Conservation

Fifteen sets of quarters were insulated during the year, and the screens on twleve buildings were replaced with storm windows.

E. Volunteers-in-Parks Program

Volunteers served in many capacities during the year, both in direct public contact work and other varied activities. A total of 89 volunteers donated approximately 8,000 hours of service in the following divisions:

Interpretation	47
Research	5
Ranger Activities	32
Administration	4
Maintenance	1

The VIP in the Maintenance Division worked under the direction of the Park Landscape Architect. As a final project to complete requirements for her Masters Degree in Landscape Architecture, a University of Illinois student developed a landscape management plan for Yellowstone Park roadsides.

Housing for volunteers during the busy summer months is very limited. For that reason, most volunteers live in the park

V. OTHER

E. Volunteers-in-Parks Program (continued)

and are concession employees or spouses of National Park Service employees. Volunteers serving during the fall, winter, and spring months are usually provided with housing.

F. Youth Conservation Corps Program

A seven-day residential coed YCC Camp was operated in the Canyon area. There were 24 enrollees, 12 males and 12 females, ranging in age from fifteen through eighteen years.

The operation of the camp was contracted to the Student Conservation Association, which provided six staff members, three male and three female.

Major projects included trail rehabilitation and relocation, replacement and construction of trail bridges, backcountry cleanup at various locations, boundary marker maintenance, assisting the United States Fish and Wildlife Service in sucker trapping in the Yellowstone Lake area, construction of fish barriers, cleanup of dump sites, repainting of vehicle bridges, guardrail painting, and construction of a ballfield in the Canyon area.

G. Volunteer Conservation Corps

The Volunteer Conservation Corps, sponsored by the National Hiking and Ski Touring Association, worked for two weeks during the summer. The group was composed of seven men and two women and all participants were prepared to backpack and camp in the backcountry for the full ten work days. The following is a brief description of the projects accomplished by the group:

1. Constructed a 75-foot cable footbridge over the Bechler River at Bechler Ford to replace the old log bridge.

2. Cleared two miles of trail in the Bechler Canyon area, thus enabling foot travelers to make the trip through the Canyon without having to cross two hazardous fords of the Bechler River.

3. Completed clearing of the Bechler Meadows bypass trail to provide a route for stock parties around Bechler Meadows when the meadows are flooded.

V. OTHER

G. Volunteer Conservation Corps (continued)

4. Removed the remains of six old bog bridges in Bechler Meadows and piled the debris for burning.

5. Rehabilitated the Bechler Ford backcountry campsite.

6. Constructed a 28-foot log footbridge at the Ferris Fork crossing on the Bechler River trail.

7. Relocated the pit toilet at Three Rivers campsite.

The volunteers contributed 847 hours of time and the program was an outstanding success in the park.

H: Accomplishment of Park Goals

Goals for the 1976 FY were reached in most cases, but there were exceptions. Current goals are prepared on the basis of the FY. While we have had goals each year, and accomplishments have been attained, we are not totally satisfied that we are where we want to be in the development and use of goals; consequently, one of our goals for the coming year is to give more attention to this program.

I. Status of Planning

To date no Congressional action has been taken on the Yellowstone Wilderness Proposal made in 1971. It was sent to Congress in March 1972.

The Draft Statement for Management for Yellowstone received preliminary approval by the Regional Director on January 16, 1976. Since the management objectives had not been changed from the Master Plan, which was approved in 1974, and for other reasons by agreement with the Regional Director, public involvement was not instigated.

Members of the park staff participated in planning activities for the John D. Rockefeller Memorial Parkway as they related to Yellowstone National Park.

Because of the emergency nature of the problems with the Gardner River High Bridge at Mammoth, several meetings were held with the Federal Highway Administration in connection with instigation of planning for its repair.

V. OTHER

1. Status of Planning (continued)

Planning has proceeded for the new Mammoth and Old Faithful water supply distribution systems.

Planning has started toward renovation of the Museum Building at Mammoth to provide proper display of the exhibits and storage of the archive collection.

J. SAFETY

The Safety Program in Yellowstone National Park continues to receive high priority. A full-time Safety Manager remained in residence and spent a good portion of his time out in the park. Parkwide Safety Committee meetings were held monthly. During June through September these meetings were held at Madison, Canyon, Lake and Old Faithful, and during the winter months at Mammoth.

Prior to start of the snow machine season, training sessions on the maintenance and safety of the machines were conducted at the Vehicle Repair Shop by trained personnel. It is mandatory that any employee who operates a snow machine must attend these classes.

Defensive Driving classes were conducted during the year, with 46 employees receiving certificates. The testing of motor vehicle operators was begun during the year, using Porto-Clinic and Porto-Glare machines. It is planned to test all drivers next winter.

A comparison of accidents for the past three years is as follows:

	1974	1975	1976
Fatalities	7	5	2
Employee Vehicle Accidents	20	27	26
Employee Accidents	56	50	45

After each employee motor vehicle accident, a Board of Review is held to determine the cause, whether or not the accident was preventable, and the appropriate disciplinary action to be taken when warranted.

V. OTHER

K. Christian Ministry

This inter-denominational Ministry is related nationally to "A Christian Ministry in the National Parks." This past summer 51 college and Seminary students worked under the Yellowstone Director, Pastor Paul E. Christ, to provide services and ministry to visitors and park employees. No government funds are provided for support of the Ministry. The program is self supporting with funds obtained primarily from offerings received at services sponsored by the Ministry.

Services of Worship are held weekly at various locations in the park (26 different services on Sunday in 1976), with a total attendance of over 16,000 people. Counseling and referral for social problems, helping stranded visitors, support for the hospitalized and accident victims, and ministry to help workers and travelers with special needs are provided during the summer.

A Winter Intern at Old Faithful Snow Lodge offers weekly Services of Worship in the Old Faithful area, and Reverend Paul E. Christ provided ministry and Services of Worship for residents of the Mammoth community, with services held in the Yellowstone Park Chapel. In addition, Pastor Christ provides a counseling and wedding ministry for the 25 couples who yearly request marriage services in the park.

Two Christian Retreats and orientation conferences were held for staff members in the summer, with approximately 100 people attending the two events. A Men's Retreat was held in December attended by 10 individuals. In addition, the Ministry sponsored an 80-voice choir composed of workers recruited in the park. The choir presented the Christmas in August concert in three areas of the park featuring Handel's Messiah and Bicentennial music from American religious composers. The concerts were attended by over 1000 people.

Of special interest during the year was the International Conference on "The Gospel Freedom and Increasing Leisure" held at Colonial Williamsburg from Sepbember 29 to October 2, 1976. The theme of the Conference was "How Can the Church Participate and Contribute More Effectively Among People on the Move?" Those attending from Yellowstone were Reverend Paul E. Christ, Mr. and Mrs. Robert C. Haraden, Bethel Halladay, and Ministry Students Bill Blaine and Leslie Ann Johnson. One hundred delegates from many Christian religions

V. OTHER

K. Christian Ministry (continued)

throughout the world attended the Conference. One of the principal speakers, Archbishop Emmanuel Clarizio, Pro-Presidente, The Pontifical Commission on Migration and Tourism, Vatican City, visited the park following the Conference.

The final speaker on the program was National Park Service Director Gary Everhardt, who spoke on President Ford's Land Heritage Program, and his expectations that something good will come out of the program.

YELLOWSTONE NATIONAL PARK
CUMULATIVE TRAVEL BY ENTRANCE STATION
January 1 - December 31, 1976

Comparison Based on Number of Visitors

	Total Visitors			Comparison	
	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	277,117	314,331	323,465	+ 9,134	+ 2.9
West	630,891	697,008	766,182	+ 69,174	+ 9.9
East	386,233	471,677	553,792	+ 82,115	+ 17.4
South	530,512	638,883	740,626	+101,743	+ 15.9
Northeast	104,162	117,584	135,158	+ 17,574	+ 15.0
*Total	1,928,915	2,239,483	2,519,224	+279,741	+ 12.5
Non-Recreation Visitors	8,853	6,649	5,950	- 699	- 10.5
*Total Combined Visitors	1,937,768	2,246,132	2,525,174	+279,042	+ 12.4
Recreation Vehicles	116,963	150,771	180,499	+ 29,728	+ 19.7

Private Autos

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	78,254	92,461	95,358	+ 2,897	+ 3.1
West	169,757	196,035	217,215	+ 21,180	+ 10.8
East	110,334	139,867	164,413	+ 24,546	+ 17.6
South	149,763	187,717	217,968	+ 30,251	+ 16.1
Northeast	30,215	35,118	40,427	+ 5,309	+ 15.1
Total	538,323	651,198	735,381	+ 84,183	+ 12.9

Number of Visitors in Private Autos

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	266,062	305,121	314,680	+ 9,559	+ 3.1
West	577,173	646,913	716,809	+ 69,896	+ 10.8
East	375,135	461,563	542,563	+ 81,000	+ 17.6
South	509,195	619,467	719,295	+ 99,828	+ 16.1
Northeast	102,733	115,889	133,409	+ 17,520	+ 15.1
*Total	1,830,298	2,148,953	2,426,756	+277,803	+ 12.9

Buses

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	329	317	321	+ 4	+ 1.3
West	1,082	1,110	1,031	- 79	- 7.1
East	312	280	340	+ 60	+ 21.4
South	703	667	725	+ 58	+ 8.7
Northeast	49	79	56	- 23	- 29.1
Total	2,475	2,453	2,473	+ 20	+ 0.8

Bus Passengers

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	9,373	7,742	7,987	+ 245	+ 3.2
West	16,609	17,175	14,998	- 2,177	- 12.7
East	10,047	9,397	10,439	+ 1,042	+ 11.1
South	17,627	15,918	16,840	+ 922	+ 5.8
Northeast	1,429	1,695	1,750	+ 55	+ 3.2
Total	55,085	51,927	52,014	+ 87	+ 0.2

*The total visitors may not equal the sum of the columns because of rounding off to the nearest whole number in addends.

Private Oversnow Vehicles

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	992	635	267	- 368	- 58.0
West	27,495	22,018	21,669	- 349	- 1.6
East	735	480	457	- 23	- 4.8
South	1,764	1,575	1,598	+ 23	+ 1.5
Total	30,986	24,708	23,991	- 717	- 2.9

Visitors on Private Oversnow Vehicles

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	1,144	729	327	- 402	- 55.1
West	32,087	25,705	27,129	+ 1,424	+ 5.5
East	907	545	527	- 18	- 3.3
South	2,048	1,844	1,829	- 15	- 0.8
*Total	36,186	28,823	29,812	+ 989	+ 3.4

Snowcoaches

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	89	106	60	- 46	- 43.4
West	453	461	380	- 81	- 17.6
East	0	0	4	+ 4	+ 100.0
South	194	197	245	+ 48	+ 24.4
Total	736	764	689	- 75	- 9.8

Snowcoach Passengers

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	485	697	259	- 438	- 62.8
West	3,080	3,309	3,230	- 79	- 2.4
East	0	0	38	+ 38	+ 100.0
South	1,325	1,415	2,084	+ 669	+ 47.3
Total	4,890	5,421	5,611	+ 190	+ 3.5

Oversnow Foot Travel

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
North	53	43	212	+ 169	+ 393.0
West	1,942	3,905	4,016	+ 111	+ 2.8
East	144	172	225	+ 53	+ 30.8
South	317	239	578	+ 339	+ 141.8
Total	2,456	4,359	5,031	+ 672	+ 15.4

MONTHLY TRAVEL REPORT
December 1 - December 31, 1976

	1974	1975	1976	1975-76 Diff.	1975-76 Diff. (%)
Autos	964	1,184	1,111	- 73	- 6.2
*Visitors	3,278	3,907	3,666	- 241	- 6.2
Snowmobiles	5,545	3,853	2,681	- 1,172	- 30.4
*Visitors	6,474	4,534	3,305	- 1,229	- 27.1
Snowcoaches	151	139	54	- 85	- 61.2
Passengers	1,288	1,172	483	- 689	- 58.8
Skiers & Snowshoers	633	1,079	1,538	+ 459	+ 42.5
*Total	11,673	10,692	8,992	- 1,700	- 15.9
Non-Recreation Visitors	73	131	124	- 7	- 5.3
*Total Combined Visitors	11,746	10,823	9,116	- 1,707	- 15.8
Recreation Vehicles	26	45	84	+ 39	+ 86.7

*The total visitors may not equal the sum of the columns because of rounding off to the nearest whole number in addends.

TRAVEL TABLE
Yellowstone National Park

The number of visitors during the period between the establishment of the park (1872) and the beginning of this compilation (1895) was estimated to be not less than 1,000 nor more than 5,000 each year.

Year	Visitors	Year	Visitors	Year	Visitors
1895	5,438	1930	227,901	1960	1,443,288
96	4,659	31	221,248	61	1,524,088
97	10,680	32	157,624	62	1,925,227
98	6,534	33	161,938	63	1,872,417
99	9,579	34	260,775	64	1,929,316
		35	317,998	65	2,062,475
1900	8,928	36	432,570	66	2,130,313
01	10,769	37	499,242	67	2,210,023
02	13,433	38	466,185	68	2,229,657
03	13,165	39	486,936	69	2,193,894
04	13,727				
05	26,188	1940	526,437	1970	2,297,290
06	17,182	41	581,761	71	2,120,487
07	16,414	42	191,830	72	2,246,827
08	18,748	43	64,144	73	2,061,537
09	32,545	44	85,347	74	1,937,768
		45	178,296	75	2,246,132
1910	19,575	46	814,907	76	2,525,174
11	23,054	47	932,503		
12	22,970	48	1,013,531		
13	24,929	49	1,133,516		
14	20,250				
15	51,895	1950	1,109,926		
16	35,849	51	1,166,346		
17	35,400	52	1,350,295*		
18	21,275	53	1,326,858		
19	62,261	54	1,328,893		
		55	1,368,515		
1920	79,777	56	1,457,782		
21	81,651	57	1,595,875		
22	98,225	58	1,442,428		
23	138,352	59	1,408,667		
24	144,158				
25	154,282				
26	187,807				
27	200,825				
28	230,984				
29	260,697				

*Beginning in 1952 the figures represent travel during the calendar year instead of the period October 1 to September 30 as previously used.

SEPARATION SHEET Yellowstone NP
Archives

Type and Number of Item(s) (map, newspaper, clipping, photograph, etc.)

8 Black + White Photographs.

Description of Item(s) (include dates, names, topics, etc.)

- Construction of new Golden Gate Bridge.
- YCC crews
- Snow plowing
- motorcycles

see photocopies

Condition of Item(s) fair

Item(s) Originally Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

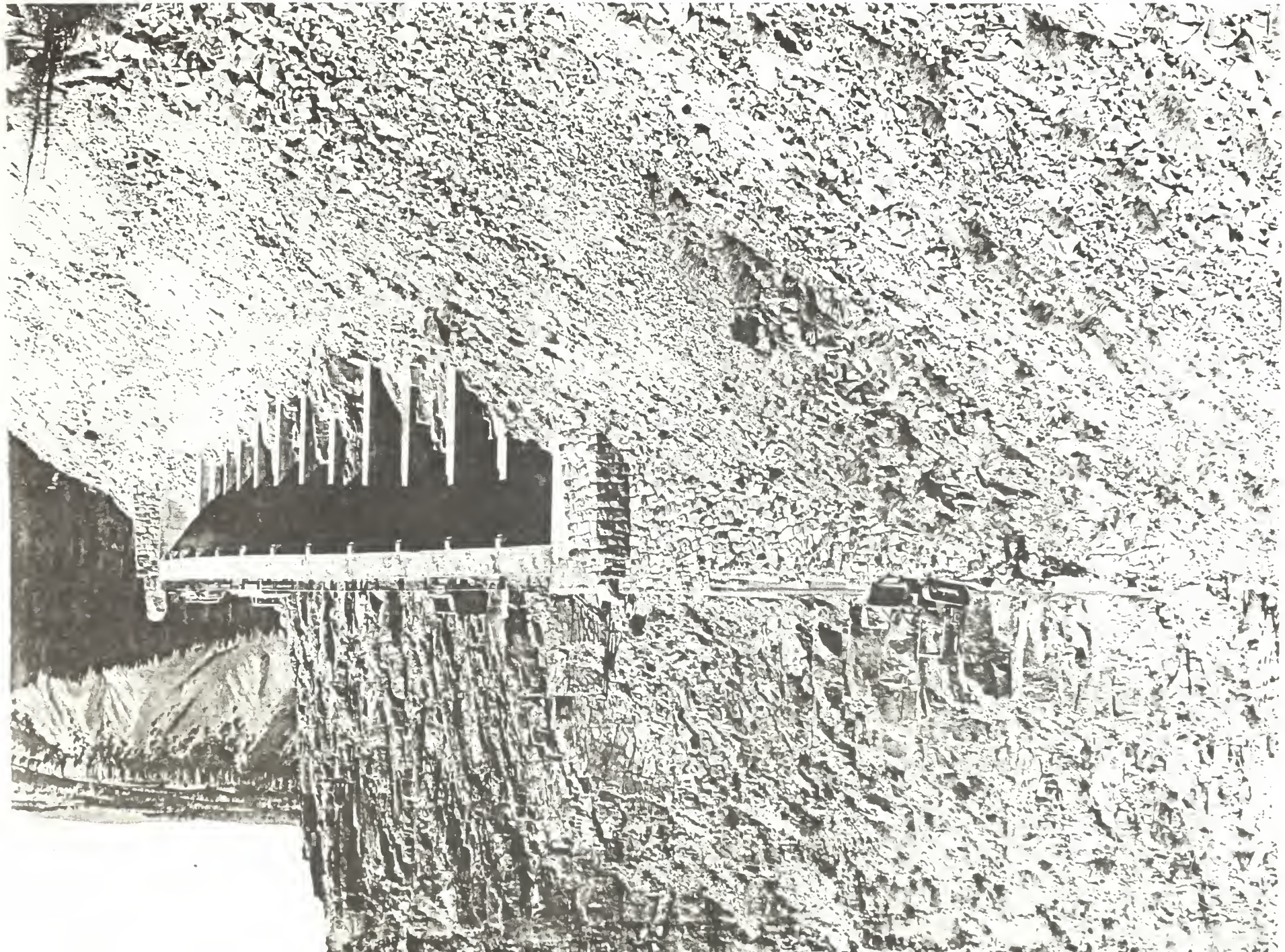
1976 Superintendents Annual Report

Item(s) Now Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

photo archives

Separated by (name, title, and office) A. Cherry

Separation Date: 7-30-03



Motorcycle Club Leaving West Entrance
Yellowstone National Park -

Off To Work
YCC Group Enroute to Backcountry
To Work on Trail Maintenance

Spring Plowing -- Bar Drift
Beartooth Highway

PAYLOADER

1-9-7-7

A-N-N-U-A-L R-E-P-O-R-T

O-F T-H-E

S-U-P-E-R-I-N-T-E-N-D-E-N-T

Y-E-L-L-O-W-S-T-O-N-E N-A-T-I-O-N-A-L P-A-R-K

YELLOWSTONE
NATIONAL PARK
LIBRARY
9582

John A. Townsley

John A. Townsley, Superintendent

Date: January 27, 1978

NON-CIRCULATING BOOK
MUST BE USED IN LIBRARY

[illegible]

SIGNATURE PAGE
YELLOWSTONE - [illegible]
IN MEMORIAM - WAYNE [illegible] ("[illegible]") [illegible]
YELLOWSTONE "OLD TIMER" [illegible]

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APPENDIX

Cumulative Travel - January 1, 1977 to December 31, 1977

1977 Travel Survey by Stages

[illegible]

[illegible]

[illegible]

[illegible]

ANNUAL [illegible]

[illegible]

Horace M. [illegible], Superintendent

The formal opening of the park took place at the Cody entrance on June 19th.

TRAVEL IN 1927

Park visitors this year totaled 200,[illegible].

ENGINEERING DEPARTMENT

Road Maintenance:- During the 1927 season 302 miles of park road, 28 miles of road in the Shoshone National Forest and 30 miles of road in the Teton Forest were maintained by nineteen crews, made up of 110 men and 30 teams.

Dust Prevention:- Another innovation in our maintenance work was the substitution of a light road oil as a dust layer instead of water, a much more efficient method although more costly.

Snow Removal:- Due to the heaviest snowfall in years, more than 15 tons of explosives were used in clearing snow from Sylvan and Dunraven Passes, the Mt. Washburn loop and the south entrance road. Sylvan and Dunraven Passes were open to traffic June 19th and the Mt. Washburn loop and the south entrance roads were open to traffic on July 1st.

PREDATORY ANIMALS

Two hundred and thirty-eight coyotes were destroyed during the year.

NATURAL FEATURES OF THE PARK

Buffalo - Lamar River Herd:- The herd total on May 31st, exclusive of the 1927 calf crop, was 815, consisting of 228 bulls, 176 steers and 411 females, which, together with the 1927 calf crop, consisting of 121, makes a grand total of 936 buffalo in the Lamar herd at this time.

Elk:- Total counts within the park 9,807, counts on areas north of park boundary along the Yellowstone River 3,236, grand total of actual counts 13,043.

PARK RANGER WAYNE L. "("REL") [illegible]

[illegible]

Mammoth Hot Springs:- The hot springs [illegible] on the [illegible] of the terraces [illegible] this deficiency has [illegible] by Jupiter, Mound and [illegible].

Upper Geyser Basin:- Old Faithful [illegible] intervals ranging from [illegible] to 68 minutes during September, October, November and [illegible]. The average interval in March was 68 minutes as compared with [illegible] in July.

DEPARTMENT OF JUSTICE - U.S. COMMISSIONER'S COURT

Hon. John W. Meldrum, Commissioner since [illegible] presiding. Proceedings were had in 26 cases during the year. There were 26 convictions and no acquittals. A total of $7[illegible] in fines, exclusive of costs, were imposed. There were 10 cases involving violations of traffic regulations, 3 cases involving violations of the Federal Prohibition Act, 1 case involving trespass and violation of park regulations governing the possession and use of fire arms in the park, 5 cases of obnoxious and disorderly conduct, and 1 case of defacing the geyser formations.

DEPARTMENT OF COMMERCE

The total collection of black spotted trout eggs from park waters was 13,313,000. The plants within the park from the spawn thus collected consisted of 3,833,000 fingerlings and 1,2[illegible],000 eyed eggs. Shipments of eggs or fry to points outside the park totaled 5,[illegible]3,000.

THE PRESIDENT'S TOUR OF THE PARK

President Coolidge, Mrs. Coolidge and their son John have returned to Rapid City, South Dakota after 5 days in Yellowstone Park. They and their party of about 50 newspapermen, secret service agents, telephone and railroad officials, arrived at Gardiner by special train at 1:20 P.M. August 22nd. They were at Camp Roosevelt and Mammoth Hot Springs the 22nd, at Old Faithful the 23rd, at Lake Yellowstone the 24th and 25th, and at Grand Canyon on the 26th. They left via the Cody gateway on the 27th, and departed from Cody by train at 1:00 P.M. The President fished in the Firehole River, and at Yellowstone, Squaw and Grebe Lakes.

PARK RANGER WAYNE F. "("LEE") [illegible]

IN MEMORIAM

WAYNE F. ("REP") REPLOGLE

April 11, 1904 - - July 4, 1977

It was with a great sense of sadness and loss that the many friends of "Rep" throughout the National Park Service and the surrounding communities learned of his death of an apparent heart attack at his home in Mammoth on July 4, 1977.

"Rep" joined the National Park Service in the summer of 1930 as a horse patrol ranger at Canyon, and returned to Yellowstone every summer as a seasonal ranger, with the exception of a four-year hitch in the United States Navy during World War II.

In the summer of 1936, former President Gerald M. Ford and "Rep" were fellow rangers at Canyon. During the President's visit to the park in 1976, the two enjoyed reminiscing about their bygone ranger days.

Each summer from 1973 until his death "Rep" escorted special visitors around the park, many of them from foreign countries. His great wealth of knowledge about the park, his ready humor, and his friendliness contributed toward making these visits unforgettable experiences for all whom he escorted.

"Rep" personified the spirit of Yellowstone. He will always remain in the hearts and memories of all who were privileged to know and love him.

PARK RANGER WAYNE F. "("REP") REPLOGLE

YELLOWSTONE "OLD TIMER" RETIRES

Andrew (Andy) Cooper retired in August after a colorful career in Yellowstone National Park.

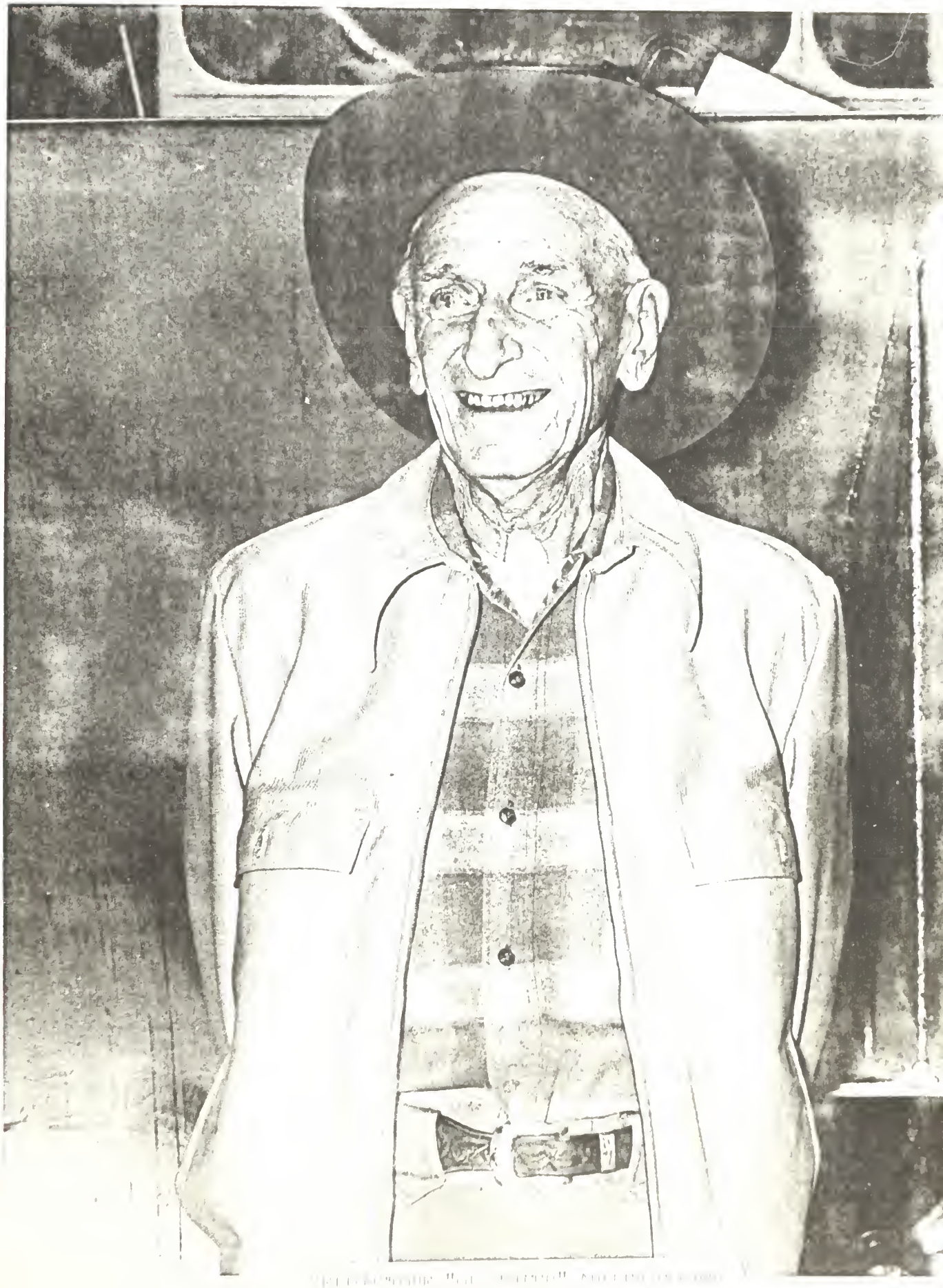
Andy was born in Patterson, New Jersey on October 4, 1896. He moved to Montana with his parents in 1905 and resided on the family ranch in Manhattan, Montana until 1919, at which time he took his first job in Yellowstone with the Yellowstone Park Transportation Company. He was employed as a wood chopper to provide cord wood for the steam boilers which heated the hotels. In that same year he drove 4-horse team water wagons, which were used to settle road dust for the tourist busses.

In 1923, Andy took his first job with the Transportation Company as a bus driver, and continued in this capacity until the park closed during World War II. After the War, he was reemployed by the Company as a gas tank driver and continued this employment until 1960 when he went to work on the construction crew of the Yellowstone Park Company hauling equipment and construction material. He worked on this crew until 1962.

In 1962 Andy accepted an appointment with the National Park Service as a Motor Vehicle Operator Heavy Duty, driving 10-yard dump trucks, semi-trailers, and other heavy equipment for fifteen years until his retirement in August 1977.

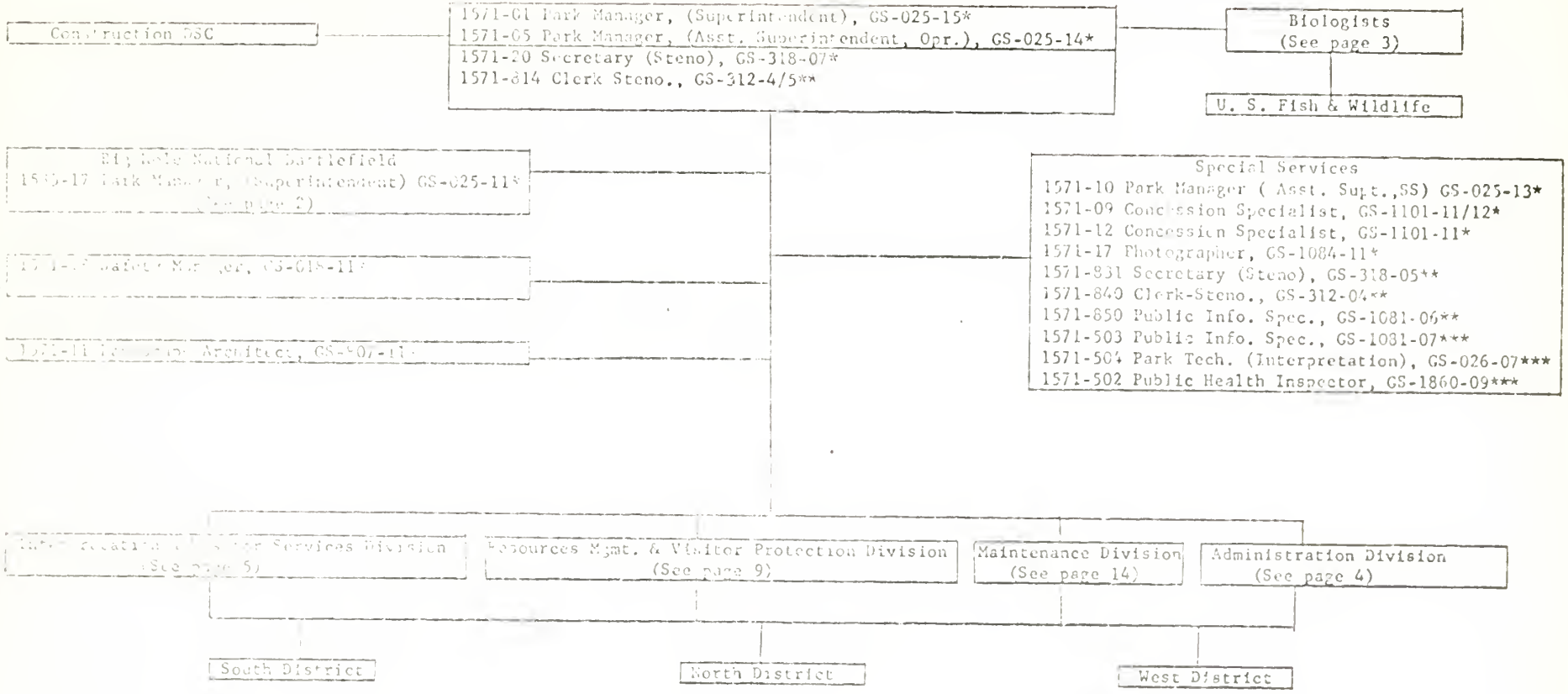
At 81 years of age, Andy retired because he wanted to have more time to devote to his hobbies, which include leather work and making saddles.

The National Park Service honors Andy Cooper for service to the public and his work in maintaining Yellowstone National Park over a span of fifty-eight years.



ADMINISTRATION

ORGANIZATIONAL CHART
YELLOWSTONE NATIONAL PARK



*Permanent
**Permanent-to-Furlough
***Permanent I

I. ADMINISTRATION

A. Personnel

During [illegible], [illegible] employees [illegible]. Six on-site training courses were presented by National Park Service employee instructors. Refresher training was given to 307 employees.

During the period March 13 to April 1, 1977 a Personnel Management Evaluation was completed by the National Evaluation Team comprised by one member from the Civil Service Commission and one from the Washington Office. The evaluation concluded that positions classified by the park under authority delegated in May 1975 were properly classified. The report indicated certain misclassification involving positions previously classified. In respond to the report, the Chief of Maintenance and the Chief Park Ranger are giving serious consideration to reorganization in their divisions to correct misclassifications and to strengthen the organizational structures by applying good position management.

Several positions in the Administrative Division were indicated to be classified improperly and a number of these have been corrected as positions become vacant. These involved reductions in grades of the positions. Minor reorganization is in progress in the division involving the combining of the fiscal and program section and eliminating one GS-12 position and establishing a lower grade technician position.

Seasonal hiring was again accomplished through registers supplied by the Rocky Mountain Referral System, which is a computerized system. Problems this year were mostly caused by applicants accepting positions and then declining them near the employment date. This may be reduced when the entire National Park Service utilizes the Referral System, which will occur in 1978.

Mr. Daniel I. Duran, Personnel Management Specialist, transferred to another agency in Albuquerque, New Mexico on October 22, 1977. His early departure was related to the indicated downgrade of the position in the Personnel Management Evaluation Report. Mrs. Peggy Parker acted in that capacity from October 23 to the end of the year. Mrs. Parker has accepted a promotion and transfer to the Department of Energy in Laramie, Wyoming effective January 29, 1978.

1. Administration (continued)

B. Awards

Eight Special Achievement Awards totaling $1,[illegible], and one Meritorious Service Award were presented during the year to the following:

Special Achievement Awards	Amount
Keith Fellbaum	$ 200.00
Jerry Phillips	300.00
Joe Halliday	200.00
Barbara Morning	200.00
Gerald Jones	200.00
Peggy Parker	200.00
Madeline Hall	200.00
Judy Churchwell	200.00
	$1,[illegible].00

Meritorious Service Award

Harold J. Bailey - Upon retirement

C. Union Management

Regular Labor-Management meetings were held during the year. The primary concerns of Labor were employee pay items and working conditions. These meetings provide a useful medium for exchange of information and concerns, and promote understanding of mutual problems.

D. Equal Employment Opportunity

The Personnel Management Evaluation Report indicated deficiencies in the EEO Program. The EEO Committee was reorganized in order to strengthen the program and to increase its effectiveness.

Minority seasonal employees increased from 17 in 1976 to 21 in 1977. There were five permanent minority employees. Eighty-four women were hired in 1977 compared with sixty-eight in 1976. They held a variety of seasonal positions such as laborers, motor vehicle operators, maintenance workers, park aids and park technicians.

I. Administration (continued)

Breakthroughs in 1977 in permanent employee and promotion of a woman from GS-12 to GS-13, and employment of minority individuals as Personnel Management Specialist (GS-12) and Supervisory Park Ranger (Park Historian) GS-11.

E. Budget and Finance (Programs)

Funding - Yellowstone National Park - FY '78

General Management and Administration (Including research expenses and safety)	$1,05[illegible],900.
Interpretation	$ 412,200.
Resource Management and Visitor Protection	$1.345,400.
Maintenance of Roads and Trails	$1,80[illegible],200.
Maintenance of Buildings, Utilities and Grounds	$1,95[illegible],200.
Motor Vehicle Operation and Replacement	$ 999,300.

Budget and Finance (Administration)

Fee Collections	$ 369,300.
Educational Expenses - Children of Employees-Yellowstone National Park	$ 475,000.
*Quarters Maintenance and Operation (Financed from rents paid by employees)	$ 250.000.
*Sanitation Collection and Disposal (Solid waste)	$ 80,000.
*Water and Sewer Expense (Portion paid by concessioners and quarters)	$ 68,000.

* Not financed from appropriated funds. The government's share of the cost of operation of utilities is included in Maintenance of Buildings, Utilities and Grounds.

I. Administration (continued)

F. Concessions

Yellowstone National Park has developed an organized, professionally staffed concessions management program to deal directly and effectively with the concessioners.

Vernon L. Kennedy, Chief of this division, has accepted an assignment as Superintendent of Fort Laramie National Historic Site. Mr. Lloyd Fuller is presently the Acting Chief of Concessions Management. Mr. Richard Hayes is the Concessions Specialist in the division.

As a result of the Concession Review Group's study in 1976, three new seasonal positions were established. The individuals in these positions were responsible for monitoring field operations of the concessioners. One was stationed at Old Faithful, one at Lake and the third at Canyon. The positions were not entirely for inspection purposes, but also served as a means of communicating daily concessioner problems to headquarters at Mammoth. The positions were felt to be highly successful.

The National Park Service is currently negotiating with General Host over the Yellowstone Park Company contract, and has been working very closely with that company for improved visitor accommodations and services.

Concessioners:

Last winter, from January through March, a total of 545 snowcoaches entered the park with a total of 4,857 passengers.

The Yellowstone Park Company reported that during the summer season through October 3 there was a total of 651,569 overnight guests, which represents an occupancy rate of 79.7%. This compares with 569,336 overnight guests the previous year. Old Faithful Inn had an 88.8% occupancy rate, which compares to a 1976 occupancy rate of 87.7%. Canyon Village had an 80.9% occupancy rate.

There were 1,481,121 guest meals served compared to 1,300,183 in 1976.

The Yellowstone Park Service Stations reported that 1977 sales nearly equaled 1976 sales, with only a 5,000 gallon difference.

Hamilton Stores reported a 12.23% increase in sales compared to a 10% increase in 1976.

INTERPRETATION AND VISITOR SERVICES

II. INTERPRETATION AND VISITOR SERVICES

A. General Interpretation

The past year was characterized by considerable change within the Division, while the output of interpretive services remained at a generally high level. Gains were made in permanent staffing, but there were net losses in seasonal staff; long-range plans for adaptive restoration of historic Building No. 1 moved to the final stages of planning prior to construction.

The Division gained a long-sought permanent position of Historian, GS-11, through conversion of a vacant position within the Ranger Division. Through a special agreement with National Archives, this position will also serve as the Yellowstone Archivist and our important archives can remain in the Park. The incumbent of this new position is Tony Dean, who arrived in June 1977.

A permanent Secretary-Stenographer position was restored during the year, and filled by Ms. Linda Miller. South District Naturalist Dave Pugh transferred from the Park in March, and the position remained vacant until June 19, 1977, when Frank Walker was selected. West District Naturalist Joe Halladay received a Superior Performance Award for filling both district jobs during the three month interim. In November, a new permanent intake position was filled by Ron Thorson, who begins his career with the Service.

On the minus side, the Curator resigned in August and the position is being redesigned before filling it. The seasonal staff was reduced from 64 in 1976, to 52 in 1977 because funds could no longer be stretched as far as they had been. Some reductions in guided trips and roving contacts were made; if no additional funds are available next year, further cuts may be made in guided trips in order to restore more roving contact.

With funds programmed in FY-1978 for the beginning of adaptive restoration of Building No. 1, Mammoth (the Visitor Center), planning was intense. The building will have extensive modifications of the interior, and restoration of the exterior. It will house an expanded museum, auditorium, and gallery of historic Yellowstone art on the main floor. The basement will provide an expanded research library, walk-in vaults for the archives and museum collection, and curatorial lab. The upper floor will house

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

offices, a natural history museum utilizing existing wildlife cases, and a classroom for the Yellowstone Institute. Construction schedule indicates a June 1979 completion date. The theme of the exhibits will be Yellowstone's history as the world's first national park; a film will interpret the development of the national park idea worldwide.

The Division and its program of visitor activities was evaluated in two phases by the Regional Office during the year. The team was generally well pleased with the quality and variety of interpretation being offered.

The Yellowstone Institute, for the second season, offered a selection of college-credit field courses. The Yellowstone Library and Museum Association sponsored the Institute with Hugh Grandell as its Director. The quality of instruction was excellent and enthusiasm by both students and instructors was keen. The numbers of students was insufficient to pay the cost of the Institute, but the YLMA Board of Trustees voted to continue its support because of the promising future of the concept.

An expanded interpretive program for winter visitors was developed. A series of seasonal, movable exhibits were conceived by the Park staff, and designed and constructed by Bill Chapman. A second series with more interpretation is being produced for the winter of 1977-78. Two new visitor contact stations were established for winter use, one at Madison Junction designed as an information shelter; and the second at Canyon, a modified mobile home with exhibits. Both stations have wood-burning fixtures and are staffed intermittently by Rangers and Naturalists. The public has responded very favorably to these new facilities.

A formal agreement between the National Archives and the National Park Service has been negotiated to establish Yellowstone as a branch of the National Archives. This will permit the retention of the Yellowstone Archives here, and commits the Service to their complete care.

A publishing milestone for the Park was realized when the Colorado University Press published the long-awaited, comprehensive two-volume history of the Park, The Yellowstone Story, by historian

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

Aubrey L. Haines. A reception, sponsored by the Mammoth Community Library, was held to honor Mr. Haines on October 13 in Yellowstone. Park employees, friends, and residents from miles around came to meet Mr. Haines and have their books personally autographed.

The newspaper tabloid for advertising the interpretive program activities in Yellowstone was used again this past summer with success. This newspaper, entitled Yellowstone Explorer, was printed four different times from June through September to advertise the progressive changes in the summer program. A total of 678,000 copies were printed and distributed to the public at the Park entrance stations and visitor centers. Feature articles and pictures were included along with the program of activities and list of concession facilities available. Flexibility is still the keynote in laying out a summer program; for it allowed each district to experiment with new programs, drop those which were not successful, and continually improve those which were retained. Park Technician Linda Young served as editor for the entire summer and did an outstanding job in addition to carrying on her regular schedule of activities in the Mammoth program. Contract for printing of the newspaper was awarded to the Livingston Enterprise in Livingston, Montana.

The system of limited range roadside radio transmitters was used for the fifth season at 1606 Khz. A percentage of down time continues to be a problem due to the fragile nature of the continuous tape and cartridge system. No new units were added this summer over and above the existing 33 units.

The recording studio and storage for the Master Slide File in Room J of the Mammoth Museum building had to be abandoned this year because accessibility to this area of the building was considered a breach of security to the museum collections stored there. Consequently, a new recording studio was constructed in an area adjacent to the Radio Shop and has proven to be satisfactory. In addition, the electronic mixer unit needed to tie the two Sony tape recorder units together in a more useable system was installed so the equipment there is not complete. The Master Slide File was expanded considerably due to the

II. INTERPRETATION AND VISITOR SERVICES (continued)

A. General Interpretation (continued)

efforts of Park Technician Jeremy Schmidt, and the entire system has been cataloged and is now located in the basement with the Park Photographer.

Three Student Conservation Aids worked in the Park this summer as part of the complement of Park Technician (Naturalist) staff in the Interpretive Division. These three aids were assigned one to each district and worked full time in the regular schedule. Without exception, their performance was exemplary and we plan to ask for three more of these young people for the 1978 season.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- North District

Mammoth: The Mammoth staff consisted of seven seasonal naturalists, including one supervisor. The Mammoth Visitor Center was open daily throughout the year, but manned regularly on a scheduled basis only during the period of May 15 to October 31. Visitor Center attendance was 173,341, and the audiovisual program was presented 2,598 times to 44,994 visitors.

The Backcountry Planning Room set up with maps and pamphlets in the Visitor Center for use by backpackers to plan their trips, continued to be a functional and popular addition to the Visitor Center operation. Minor improvements were made in that room this year.

Interpretive activities offered at Mammoth included the Upper Terrace Walk, attended by a total of 1,654 people. The Fort Yellowstone Walk offered three nights a week was attended by 1,050 visitors. Evening programs presented nightly at the Mammoth Campground and five nights at the Mammoth Motor Inn and seven nights a week at the Indian Creek Campground were attended by 14,360 visitors. Both the Chief Park Naturalist and the Assistant Chief Park Naturalist participated in the program by presenting evening programs at the Mammoth Campground several times during the summer season.

Norris: The Norris Sub-District staff consisted of three seasonal interpreters, including one seasonal Sub-District Supervisor. The visitor season ran from the middle of May through September. The Museum remained the focal point of activity with visitation estimated to exceed 289,000 visitors. Four daily guided basin walks were offered to 17,309 people. Campfire programs were offered each evening with a total participation of 7,254 park visitors. With the limited staff, trips previously scheduled in prior years such as to Monument Geyser Basin, Elk Park, Ice Lake, Grizzly Lake, Artist Paint Pots, as well as roving contacts in the Roaring Mountain, Norris Soldier Station, Artist Paint Pots, and Beryl Springs areas had to be eliminated to maintain the abbreviated schedule with only three personnel.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- North District (continued)

Tower: Only one seasonal naturalist was stationed in the Tower Fall area due to manpower cutbacks. Nightly campfire programs at the Tower Campground were offered five nights a week by this individual and two nights a week by a Mammoth relief naturalist to a total of 5,042 visitors for the season. The popular Fossil Forest hike up Specimen Ridge was given twice a week to 672 visitors and the Lost Lake Nature Walk also twice a week to 563 people. No roving contact duty was permitted with the limited manpower available.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- South District

General: Several new programs were tried in the South District this summer, as explained in the individual area reports. One of the big occurrences was the initiation of winter interpretation in the South District. A split Ranger-Naturalist position was established with Joe Fowler selected for the assignment. A 12' x 60' "warming trailer" was set up at the Canyon Junction. The trailer will serve as a welcome relief to the cold snowmobilers and cross-country skiers, as it contains a Franklin stove. Maps, photos, and winter related exhibits were designed and installed to help orient the visitors and to tell some of the winter story of man and the animals. A new Winter Guide to the Canyon Area was written and later published by YLMA. Several new winter exhibits were completed by Bill Chapman and installed, such as the Canyon Junction panel, Wildlife in Winter, Man in Winter, and Thermal Basins in Winter. Two portable Winter Kill exhibits designed to be placed next to a winter kill were also contracted for. All of these efforts were in conjunction with the Park's plan to get the winter visitors to experience not only Old Faithful, but other areas of the Park as well. So far, the response to the trailer has been excellent.

Since this was the Centennial Year of the flight of Chief Joseph and the Nez Perce, daughter of the tribal historian, Mary Slickpoo, was hired to present programs and demonstrations concerning the Nez Perce. Mary's slide programs included the history of the Nez Perce, their traditions and family customs. The cultural demonstrations on beadwork and other native crafts proved very popular and enlightening to the visitors at Canyon and Fishing Bridge.

We did try an experiment with two dramatic programs on August 21 at the Fishing Bridge amphitheater. The TheatrElan Company from Portland, Oregon presented a children's program "Happy Trails" and a general family show, "I'd Rather be Camping". Both performances were a success, and this would be a very worthwhile venture for more amphitheaters next year. This group also performed at Glacier and Grand Teton.

Overall, this was a very good year for South District. Our six new interpreters turned out to be extremely competent and eager

to do a good job. We would all have had a much harder time without the able assistance of Harlan Kredit, the South District Assistant Naturalist. Harlan kept track of equipment, supplies, audio-visual needs, the 1606 radio system, and a host of other details, as well as presenting regular walks and talks.

Canyon: The Canyon Visitor Center was open from May 15 until October 24, an increase of one week in May and in October. Visitation increased considerably again this year, with 389,215 persons entering the Visitor Center. This is an increase of 72,479, or an 18% increase over the previous year. The main increase was during the months of May and June when all park visitors were routed through Canyon due to the Golden Gate Bridge repair project. With this visitation, and a cut in personnel, there was a tremendous demand on each individual. Student Conservation Aid, Tracy Weise, was assigned to the area in mid-June and helped ease the load some. More personal services support is needed in the Canyon area, especially for roving interpretive duty on the Canyon Rims and in Hayden Valley.

Three new weekly programs were initiated in August, and each was a success. "Rocks of Yellowstone" was a "hands on" 7 p.m. talk and demonstration, while two walks, "The Birds of Hayden Valley" and the "Yellowstone Ecosystems Hike" drew averages of 30 and 20 respectively. Almost 11,000 visitors took the 359 Canyon Rim walks. A footnote: over half of the staff succumbed to the Canyon sickness this summer, creating further hardships on an already short staff.

Lake-Fishing Bridge: The Fishing Bridge Visitor Center was open daily from May 29 until September 24, with a total of 139,553 visitors. The ever-popular walks, such as Pelican Creek and Storm Point continue to draw thousands of visitors during the summer. Over 60,000 visitors enjoyed the evening campfire programs presented at Bridge Bay, Fishing Bridge and the Lake Yellowstone Hotel. During September, when it started getting too cool to sit out for a program at the amphitheater, experimental evening programs were presented nightly at the Lake Yellowstone Hotel from September 10-24. Except for the last three nights, we had a full house each night.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- South District (continued)

Several interpretive needs were identified this summer, and are now included in the goals for next year, such as: increased roving duty in the Fishing Bridge and Mud Volcano areas, more 7 p.m. programs to reach the children and others who can't stay up for the regular 9:30 p.m. slide shows, a biology program. and in general, more children's interpretive opportunities.

The biggest loss to Fishing Bridge in many years will not be felt until next season. Bob Jonas, the senior supervisor at Fishing Bridge retired at the end of the summer. He has accepted the position as head of his department at Washington State University. He was an inspiration to us all, and will be sorely missed.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- West District

Old Faithful: The interpretive staff of the Sub-District consisted of sixteen employees, including the permanent Sub-District Naturalist (GS-9) and the subject-to-furlough Assistant Sub-District Naturalist (GS-7). This reduction of three, as compared to 1976, produced an impressionable impact. In 1976 our budget was supplemented by special Bicentennial monies, which allowed us to increase the staff in order to offer additional Bicentennial programs and to serve the 2.5 million visitors who came to participate. In 1977 the visitation to Yellowstone again reached almost 2.5 million. Our ability to serve them fell below the desired standard!

One of the Old Faithful staff members, David Aker, was a Student Conservation Aid, participating in the program established by the Student Conservation Association. Dave was included in the full program of activities and performed very well. He was keen intellectually and has a fine personality.

Due to the light snow pack last winter the Park was opened to the public earlier this spring. The Old Faithful Visitor Center opened April 15, and remained open daily through October 31. Throughout the main season the hours were from 8:00 a.m. to 9:00 p.m. In addition to the regular information and services offered at visitor centers, the Old Faithful Center is the source of information on expected eruption times for geysers in the area. A high percentage of the visitors to the area rely on this information in planning their activities for the day.

Conducted interpretive activities were initiated in mid-May on a limited basis. The frequency and variety increased considerably after June 1. Owing to the fact that ten of the Old Faithful staff were embarking on their first summer in Yellowstone, the first ten days of June included considerable time in training, area familiarization, and program preparation. The schedule of activities was full and very busy from June 15 through Labor Day. The number of programs tapered off from early September until the close of the season on October 31.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- West District (continued)

Due to the reduced staff, some of the activities offered last year were dropped. These programs included the overnight backpack trip and the children's program at Madison Junction. The latter was offered at Old Faithful, which saved time ordinarily spent in travel. Other programs were offered less frequently which made time available to experiment with new activities. The overall program included a good balance of short walks and half-day hikes with emphasis on the thermal features and thermal geology, making use of the various thermal basins in the District. Activities on a number of other pertinent themes brought variety to the interpretive program. Scheduling was established to distribute activities throughout the day including the evening hours when visitors had more time to participate.

The backpacking, map/compass, and photographic demonstrations were popular activities which stimulated intense interest. Visitors who come to these activities want to develop new skills and improve their ability, and really get involved in the activity. The French and German language walks served a modest number again and proved to be a helpful highlight to each individual's visit.

New and innovative activities included two living history presentations. One was a mountain man's interpretation of the thermal areas, and the second dealt with the experiences of a chambermaid working at Old Faithful Inn in 1915. The most unusual program offered was a dramatic enactment of an eruption of Old Faithful geyser. All of these programs were well attended and stimulated considerable visitor response.

The Visitor Center is a beehive of activity due to the high number of visitors in the Old Faithful area. Approximately 806,195 visitors came into the Center, an increase of 3.7% over last year. We appreciate the assistance of several Volunteers-In-Parks persons in serving the needs of these visitors.

Roving contact in the thermal basins continues to be a very important activity. Approximately 19,880 visitors were contacted through this approach, offering interpretation and information. For many, it is the only contact that they have with a uniformed person other than at the entrance stations.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- West District (continued)

Being solely responsible for the issuance of backcountry permits at the Old Faithful Visitor Center was a tremendous drain on the naturalist manpower this summer. It amounted to approximately twelve hours per day seven days per week. Much more involvement by the Protection personnel is in order in the future.

The winter operation went smoothly with three seasonal naturalists being involved in addition to the permanent Sub-District Naturalist. Snowfall was very light throughout the winter, resulting in a great reduction in the number of small snowmobiles. The number of visitors entering by snowcoach was up to normal levels, however. The net result was that visitor center attendance was down, but attendance on the Geyser Hill walk and at the Evening Program was about the same, as these activities are made up mostly of the overnight visitors.

A new visitor contact station was developed at the Madison Junction picnic area where a high percentage of the snowmobilers make a rest stop. It was manned about four hours per day five days per week. This was a highly successful venture, both from an interpretive/information standpoint, and from a park and visitor protection viewpoint. Through this informal contact it was possible to promote understanding and appreciation of park values among many who are strongly oriented toward simply having fun with their machines.

Another phase of expansion in the winter program included the development of nine roadside exhibits. These dealt with such topics as snowmobiling and winter safety, winter stress on wildlife, and orientation maps which also indicated visitor services. The exhibits were done by Bill Chapman of Gardiner, Montana. Mr. Chapman has been contracted to complete an additional fifteen exhibits this winter dealing with winter interpretation, orientation, and safety.

Grant Village: The interpretive staff of the Sub-District consisted of seven seasonal naturalists, including the seasonal Sub-District Naturalist (GS-6). Five of the staff members were working their first season as interpreters in Yellowstone. Everyone became enthusiastically involved and developed several new programs.

II. INTERPRETATION AND VISITOR SERVICES (continued)

B. District Interpretive Activities -- West District (continued)

They included a Sketch Walk, a Wilderness Walk to Riddle Lake, a walk to discover Natural Foods and Earth Medicines, a Back-packing Demonstration, and a Geology Walk. A regular schedule of conducted walks and roving assignment was maintained in the West Thumb Thermal Basin, and evening campfire programs were presented daily at Grant Village and Lewis Lake. The Visitor Center opened to the public on May 28 and remained open daily through October 4. The Backcountry Use Permits were issued from the Visitor Center by the Ranger personnel. One of the rooms adjacent to the lobby was designated for that use. This arrangement has been far more satisfactory than that at Old Faithful. The Artists-in-the-Parks "Poster Art" was displayed in the Visitor Center in July. It attracted moderate attention. It is felt that staffing level was about right for this area and would discourage any reduction.

Big Hole National Battlefield

Yellowstone continues to provide staff and technical assistance to Big Hole National Battlefield with large maintenance projects, interpretation, resources evaluation, and planning.

Through the help of the Yellowstone Library and Museum Association the Encampment Trail leaflet was printed and available for use in time for the Centennial Memorial Program held at Big Hole at 1:00 on Tuesday, August 9, 1977. A self-guiding trail with markers matched to the leaflet was constructed to complete this interpretive package.

Three members of the Interpretive Division, four members of the Ranger Division, several Maintenance personnel, and Superintendent John Townsley were on hand to assist at Big Hole National Battlefield prior to and during the program.

Yellowstone Library and Museum Association

The Association made a gross income of $240,406.00, for an increase of 16½% over 1976. Donations to the National Park Service totaled $51,203.00 for the year. The Association now operates two branch operations; Grant Kohrs National Historic Site and Big Hole National Battlefield, and donates funds towards acquiring needed material for their use. Donations in Yellowstone covered free publications, operation and development of the Research Library, design and construction of winter wayside exhibits, rehabilitation of existing roadside exhibits and purchasing materials for living history.

The Association also provided funding for the operation of the Yellowstone Institute. The Institute provided instructors for 17 courses, paid them honorarium for their services, and secured students through advertising and direct mailings. There was a net loss of $8,970.00 to the Association, primarily due to limited knowledge of the Institute by the public. The Board of Directors decided to continue the Institute for another year, as it has so much promise of exceptional merit as an educational program. An application for a one-time grant from the Dept. of Energy has been made, which will relieve the Association of a large part of its subsidy for one year.

RESOURCES MANAGEMENT AND VISITOR PROTECTION

III. RESOURCE MANAGEMENT [illegible]

A. Law Enforcement

The park participated in the Crime Insurance Program sponsored by the General Account of Investigation. We estimate that well over [illegible] million people were contacted concerning how they might help in preventing crime in Yellowstone National Park. The following methods were used:

> The hazard brochure which is given out at the entrance stations now includes warnings concerning property theft and how it might be prevented.
>
> The "Yellowstone Explorer" newspaper which contains information on park activities now also includes information concerning crime prevention.
>
> The AM radio message broadcasts at each of the park entrance stations include a short sentence on crime prevention.
>
> At each campfire program and conducted walk, the interpreter includes a reminder concerning property thefts and what the visitor might do to prevent himself or herself from becoming a victim.

The bond forfeiture schedule for petty offenses within the park was revised to include some additional offenses and to increase the amounts of bonds in line with inflation. In conjunction with this, the number of people who failed to forfeit collateral (pay their fines) was extremely low this year due to a vigorous effort on the part of the Ranger force to see that the violator met his/her responsibilities in this respect.

With the advent of a new law enforcement commission and its specific training requirements, a great deal of time and effort has been spent in seeing that an adequate number of Rangers receive the necessary training to qualify. In this respect, the Rangers in Yellowstone received 3,7[illegible] person-hours of law enforcement training. This training was provided by the park

III. RESOURCE MANAGEMENT AND VISITOR [illegible]

with help from the Regional Office, by the Federal Law Enforcement Training Center and, in a few instances, Rangers were able to attend state and local law enforcement academies.

The fee collection system for the park was centralized in the Headquarters area at Yellowstone, and the Law Enforcement Office provided a recurring survey and recommendations for safeguarding the monies collected.

It has been a tradition to hold a pistol match between the Ranger forces of Yellowstone and Grand Teton National Parks. This year approximately 40 Rangers participated in the match, which included many practical exercises involving not only firing a weapon but also thinking about the hazards and the problems involved in the use of weapons. It also included a phase which tested the physical condition of the individuals.

B. Regulations

Proposed revisions to the fishing regulations were made to hopefully make them more manageable and easier for the visitor to understand, and still accomplish our fisheries management goals. A survey of the present special regulations pertaining to the park was made, and future changes will be recommended so that outdated restrictions may be eliminated and other regulations clarified.

C. Tort Claims

There were 12 tort claims filed during 1977. Four of them were major in nature. Melvin Ford, who was injured by a bear in the Fishing Bridge Campground in 1976, filed a claim for $248,000. A claim for $87,000 was filed by the parents of Heather Tenney who was burned by an erupting thermal feature near Firehole Lake. Hamilton Stores, Incorporated filed a claim for $23,000 for water damage to merchandise stored in the basement of their Upper Store at Old Faithful. Donna Mae Sedlmeier filed a claim for a horseback accident that occurred at the concession horse facility at Canyon in the summer of 1975 in the amount of $500,000. The other claims were more minor in amount

involving motor vehicle accidents and, in two cases, trees falling on vehicles.

D. Weather Conditions

The early months of 1977 were characterized by near normal temperatures but were generally to be a record lack of moisture. Snow cover was so light that ungulates were scattered about parking, with little of the normal winter stresses involved. Summer precipitation was much heavier than normal, which negated the expected fire danger from the dry spring, but stream and lake levels remained at record lows throughout the season. Fall and early winter precipitation was higher, but the year's total was still subnormal.

E. Fish and Wildlife Management

1. United States Fish and Wildlife Service - Technical Assistance Project

The Yellowstone fishery was monitored for the fifth year by the Volunteer Fisherman Report (VFR) cards in conjunction with park fishing permits. During 1977 154,581 anglers fished over 291,800 fisherman-days in the park. This has proven to be a valuable management tool for determining human use and evaluating regulations. Yellowstone Lake cutthroat spawning runs were enumerated on Pelican, Clear, and Cub Creeks by the operation of weirs and traps. The non-indigenous sucker spawning run on Pelican Creek was destroyed for the second consecutive year. The purpose of the trapping operations is to evaluate effects of sport fishing and especially the 13-inch minimum size limit. Preliminary results indicate that the regulation is increasing the average size of trout in the population, which is a major part of the biological goal. Studies continued on the effects of fish populations on invertebrate species composition and abundance in relation to fish and fishless streams.

A water quality and ecological study was initiated on Slough Creek in response to concern over possible mining activity in the headwaters area. Preliminary baseline limnological data was collected monthly from

III. RESOURCE MANAGEMENT AND RESEARCH [illegible]

Lewis and Yellowstone Lakes due to their position in the "let burn" zone. These data will be used in the future to study the effects of fires on the aquatic system.

The native and threatened species restoration program continued with the planting of grayling [illegible] in Canyon Creek and transplanting Heart Lake cutthroat trout to a refuge in Pocket Lake. A cooperative program with the Wyoming Game and Fish Commission resulted in the transplant of a group of unique Yellowstone cutthroats from Sedge Creek to a barren section of the Yellowstone River in the Teton Wilderness area.

Back-country lake and stream surveys were accomplished on seven lakes and four streams.

A 201-page Annual Technical Report for the aquatic and fishery management program in Yellowstone Park was completed and distributed by the U. S. Fish and Wildlife office in Yellowstone National Park.

2. Wildlife Management

Bear management activities were very close to the level of the previous year, with fewer injuries to humans. One serious injury occurred early in the season when a research scientist was attacked by a grizzly bear in the Fawn Pass area. In another serious incident, the wife of a Park Ranger was attacked and mauled by what was determined to have been a black bear. The third injury involved a young boy who received superficial wounds on the head from a bite by a black bear. One grizzly died from an accidental drug overdose, two were killed by vehicles and a fourth was suspected to have been killed by a poacher. There were four control kills of black bears, two were killed by vehicles, one died from an accidental overdose of drug and one was shot by a camper who claimed to have been defending his family. There were nine transplants of grizzly bears during the season and fifteen transplants of black bears.

There were virtually no movements of elk from the Northern Herd outside the park during the past winter.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

Rangers within the park were almost completely inaccessible all winter, leaving little incentive for movement to lower elevations. A special, post-season elk hunt was scheduled in January in the Gallatin Valley outside the park, but it was cancelled after the first weekend because of limited elk movements. In December, however, with heavier snows elk were beginning to move beyond the north boundary of the park.

A proposal received from the Gallatin Elk Committee, and approved by the Director of the Montana Fish and Game Department, suggested the trading of some 19,610 acres in the northwest corner of the park for National Forest lands west of the Gallatin River. The purpose of the exchange, as proposed by the Committee, was to enable the Montana Fish and Game Department to achieve better control of the Gallatin Elk Herd by opening the desired park lands to hunting. The proposal was submitted to the Washington Office for review and comment.

Trapping and transplanting of golden eagles from the Dillon, Montana area to the park continued this year with eagles being trapped and moved to the park. The purpose of this program is to reduce lamb losses in the Dillon area by relocating the eagles in parts of the park where carrion might be easily available as an alternate food source.

F. Wilderness and Backcountry Management

In 1977 there was an approximate 10 percent increase in backcountry use over 1976. This becomes more significant when the slight drop in total park visitation is considered. The new Servicewide Permit System was begun this season in the park. There were some problems encountered with the system, and recommendations for alleviating the difficulties have been submitted to the Washington Office.

G. Park Visitation:

The park was open for public travel on the traditional May 1 opening date; however, because of the relatively mild winter, the entrances were open prior to May 1. The Beartooth Highway was open for travel by April 30.

III. RESOURCE MANAGEMENT AND VISITOR ACTIVITIES

Road closures for the winter began on October 1[illegible] when the Beartooth Highway and operation of the Northeast Entrance were closed for the season. The East, South, and West Entrances closed on October 31. Official opening for snowmobiles was on December 17.

Annual park visitation totaled [illegible],487,[illegible]4 persons. This total reflects a decrease of 1.[illegible] percent over the previous year. Winter visitation - January through April and November through December - totaled 1[illegible],[illegible] persons. This total reflects an increase of [illegible]0 percent over the previous year during the same period.

H. Entrance and User Fee Collections

Station	Summer	Winter	Golden Eagle Passports	Total
North	$106,618.50	$ 2,090.00	$ 18,570.00	$127,278.50
West	300,797.00	13,664.50	49,680.00	364,141.50
South	28,870.50	1,676.00	9,310.00	39,856.50
East	223,890.50	611.50	54,740.00	279,242.00
Northeast	60,475.50	---	11,840.00	72,315.50
Total	$720,652.00	$18,042.00	$144,140.00	$882,834.00

In addition to fees collected from Single Visit Permits and Golden Eagle Passports, 15,110 Golden Age Passports were issued free of charge to persons 62 years of age and older.

Campground fees were collected in 14 campgrounds (12 regular plus two group campgrounds) approximately from June 17 through September 4. The amount collected totaled $414,192.73.

I. Special Use Permits

The Visitor Services Office issued 26 Special Use Permits during 1977.

III. RESOURCE [illegible]

J. Central Communications Center [illegible]

	Year		
	1975	1976	1977
Employee Vehicle Registration	[illegible],600	[illegible],525	7,442
Visitor Identification Notices	638	612	578
Percent Located	17.6	[illegible]	24.3
Backcountry Permits Recorded	6,365	[illegible],154	[illegible]
No. of People on Permit	17,994	19,424	23,135
Teletype Messages Sent on Law Enforcement Teletype System	1,152	2,116	1,965
NCIC Inquiries	1,118	809	1,031
Law Enforcement Records Checks	2,013	2,500	3,278
All Points Bulletins	44	49	21
Field Interrogation Cards Filed	805	662	681

K. Fire Management

i. Structural Fires:

A new 750-GPM truck was purchased through General Services Administration and a surplus 500-GPM truck was transferred to Colorado National Monument. Fire Brigade training took place in all Sub-Districts except Pechler. Over 200 smoke alarms have been installed in dormitories and residences parkwide. A spark arrester was installed in the chimney of Old Faithful Inn by the Yellowstone Park Company after three fires in four years. Total property loss this year was estimated at $1,840 as a result of seven fires. No injuries were reported as a result of structural fires.

III. RESOURCE MANAGEMENT AND PROTECTION

ii. Wildland Fires:

Forest fire activity was about normal during the season despite conditions that brought conditions might lead to a catastrophic year. Our mean fuel moisture (1,000-hour fuels) remained above past critical fire season averages. Twenty-nine fires were reported, and total area burned was [illegible] acres. Eighteen of the fires, eight of which were allowed to burn naturally, were lightning caused. The total area burned by natural fires was slightly over 10 acres. The total area burned by the 11 suppressed fires was 57 acres. The cost of suppressing fires in Yellowstone this season was $[illegible], with monitoring for natural fires costing $[illegible],741.

Yellowstone Rangers and Technicians participated in interagency training as students and instructors at West Yellowstone Interagency Fire Center, Missoula Aerial Fire Depot, National Fire Training Center at Marana, Arizona, and an Interagency Team Seminar at Reno, Nevada. Park personnel were dispatched to Bandelier National Monument for four days to assist in demobilization and mop-up operations of a fire which reached 15,000 acres. Personnel were also dispatched to Olympic National Park, Washington; Sequoia National Forest, California; and a Bureau of Land Management fire near Cody, Wyoming. Yellowstone requested and received an inter-regional fire crew for the Trout Fire (40 acres). The West Yellowstone Interagency Fire Center furnished aircraft for reconnaissance and administrative purposes. Smokejumpers from the West Yellowstone Interagency Fire Center assisted on seven fires in Yellowstone at a total cost of $16,490.42.

iii. Helicopter Operations:

This was an uncharacteristically light year for helicopter use in Yellowstone National Park. The six helicopters on contract, or under agreement, during the year flew 205.7 hours total, 88.1 of this by contract ships in Yellowstone.

III. RESOURCE [illegible]

Helicopter [illegible] by American Aviation of [illegible]; [illegible] Helicopter II was an Alouette [illegible] Inland Helicopters of Grants Pass, Oregon. [illegible] contract. The B-1 started on June [illegible], [illegible] Alouette on July [illegible]. The [illegible] the entire period [illegible] until the Alouette arrived, [illegible] the rest of its contract period at West Yellowstone.

Four other helicopters were used during 1977. A Hughes 500 was used for 5.[illegible] hours when Helicopter I was unable to meet the specifications of its contract by the starting date, and a Jet Ranger was used for 8.2 hours while the Alouette III was unavailable. Another Jet Ranger from the Gallatin National Forest helped out during the Trout Fire (2.4 hours); and the Bridger-Teton National Forest's Jet Ranger was used to evacuate a burn victim from Heart Lake (1.7 hours).

Fire use of helicopters was only 47 hours (contract helicopters) due to frequent rains; and search and rescue totaled only 14.8 (the Bridger-Teton's 206 included) although helicopters were used on 20 searches, rescues, and medivacs in the park. Additionally, our helicopters traveled outside the park five times to assist other agencies in searches or rescues.

The B-1 rented for $130 per hour and the Alouette for $360 per hour. The total amount paid to the respective contractors (including flight time, per diem, mileage, etc.) was $16,2[illegible].99 to American Aviation and $30,65[illegible].00 to Inland Helicopters. Each company was guaranteed 150 hours of flying time. After actual hours flown and penalties for unavailability were assessed, Helicopter I was 28.3 hours short of its guarantee, and Helicopter II was 6.5 hours short. During the 90-day contract, the Bell was unavailable for six days and the Alouette for 19 days.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

L. Forestry Program

i. Soil and Moisture Conservation

Soil and moisture conservation projects concentrated primarily on completion of removal and obliteration of the Reese Creek fence, noxious weed detection and control, and landscaping work necessary following the removal of tree hazards. The Reese Creek fence project was initiated in the fall of 1975, with the major removal occurring during the summer of 1976. The work this season consisted of final inspection, removal of some materials, and recordkeeping tasks. All office files required reorganization and maintenance to provide necessary continuity.

Detection and control of Linaria dalmatica continued on all roadside areas of the park exclusive of the Mammoth area. The method of eradication was manual grubbing. All locations where the toadflax was located have been placed on a master map. There did not appear to be any significant increase in incidence of toadflax compared to the 1975 season. Analysis and evaluation of past herbicide application were begun this season and will be expanded next season. Permanent evaluation study plots have been established in the Mammoth Hot Springs area.

Following the removal of tree hazards in the developed areas of the park, it was necessary to landscape. Litter materials were either chipped or hauled to dump sites. Any other vegetation or ground cover disturbed by the hazard tree project, was returned to an acceptable appearance.

ii. Insect and Disease Detection

Three aerial reconnaissance flights were flown. In June Forestry Technician Freet flew up the Lamar and Soda Butte drainages to monitor spruce budworm infestations. It was noted at that time that spruce budworm defoliation was decreasing; however, defoliation was evident in isolated clumps of subalpine fir. The agent associated with the defoliation of subalpine fir is a small bark beetle of the genus Dryocoetes. Wayne Bousfield of the United States

Forest Service, Missoula, flew the northern Yellowstone region on July 26. He also noted the decrease in spruce budworm activity. Mr. Fousfield estimated that acres of visible budworm defoliation decreased from 114,572 acres in 1976 to 79,330 acres in 1977. Scott Tunnock, U.S. Forest Service, and Forestry Technician Freet flew reconnaissance over the entire park on August 17. This flight established that acres of lodgepole pine containing mountain pine beetle-killed trees decreased from 614,206 acres in 1976 to 12[illegible],290 acres in 1977. The areas exhibiting the most mountain pine beetle activity were east of West Yellowstone from Echo Canyon north to Grayling Creek and in the Upper Geyser Basin. The defoliation of subalpine fir was also identified near Lake Butte. Blister rust detection surveys were conducted in the Mammoth area in preparation for control work during the 1978 season.

iii. Forest Disease Control

Blister rust control by method of pruning was conducted on 50 acres near Golden Gate on Terrace Mountain. Pruning and associated surveys accounted for approximately 33 person-days. Blister rust pruning will be confined to the Mammoth development area in 1978.

iv. Hazard Identification and Removal

Major emphasis was given to the identification and removal of tree hazards in areas of high visitor use. Training for the purpose of identification of hazards was given to the crew by Ralph Williams, pathologist, U.S. Forest Service, and Forestry Technician Freet. A tree hazard rating system was established in an attempt to standardize the evaluation process. The project was to be organized with the Forestry Office providing identification and the Maintenance Division removing the hazards. The Maintenance Division was unable to hire a crew for removal and had to rely on surplus manpower on an intermittent basis. Due to legal ramifications of leaving standing marked hazard trees for extended periods, the forestry crew provided removal as well as identification of the hazards. Approximately 2,000 trees were marked for removal. The Maintenance Division removed about 25 percent, with the forestry crew removing the remaining 75 percent. Every campground,

picnic area and residential area was rated as to hazard priority. The highest priority visitor-use area was worked first, and in each the highest priority trees were removed. Following is a list of visitor-use areas which have been worked for tree hazards to some level of completion:

1. Indian Creek Campground
2. Mammoth Terrace Drive
3. Apollinaris Spring Picnic Area
4. Lava Creek Picnic Area
5. Tower Fall Campground
6. Pebble Creek Campground
7. Warm Springs Campground
8. Northeast Entrance Residential Area
9. Canyon Campground
10. Upper Falls Parking Lot
11. Artist Point
12. Norris Campground
13. Cascade Picnic Area
14. Bridge Bay Campground
15. Lewis Lake Campground
16. Snake River Ranger Station Residential Area
17. Bechler Ranger Station
18. Macison Junction to West Yellowstone Road
19. Gallatin Highway
20. Canyon Residential Area
21. Superintendent's Picnic Area (Indian Creek)
22. Mammoth Campground

Six tree failures resulted in property damage this season. Each failure was investigated by field ranger personnel with followup investigations by Forestry Office personnel.

Sixty-six person days were spent on removal operations by the forestry crew. Some of the time spent in rehabilitation landscaping is included in this person-day estimate.

Cordwood resulting from the tree hazard reduction project was utilized by two park concessioners on a limited basis and by the National Park Service to a major extent for administrative purposes. The concessioners utilizing cordwood were the Triangle Firewood Company and the Yellowstone Park Company. Cordwood was supplied to most residential areas of the park to be utilized in wood-burning heating stoves and to some

amphitheaters for evening interpretive programs. With the scheduled installation of more wood-burning heating stoves in government quarters, wood utilization by park residents should help to alleviate the cordwood disposal problem in the future.

III. RESOURCES MANAGEMENT AND VISITOR PROTECTION

M. Research Accomplished

Douglas B. Houston, Elk as Winter-Spring Food for Carnivores in Northern Yellowstone National Park
Natural Sciences Project YELL-N-296

Douglas P. Albin and John W. DeWitt, Some Effects of Forest Fires on Selected Streams in Yellowstone National Park
Humbolt State University, Arcata, California
Contract No. CX1200-6-B037

Don G. Despain and Robert E. Sellers, Natural Fire in Yellowstone National Park
Western Wildlands
Summer, 1977

Don G. Despain, Forest Successional Stages in Yellowstone National Park
Information Paper No. 32
September 1977

Theses Received

Pemoulie, Jean-Marc, Yellowstone National Park and "le Parc Nationale des Pyrenees" Occidentales; a Parallel Study
University of Pau and Der Pays de L'Adour, France
1975

Chester, James Michael, Human-Wildlife Interaction in the Gallatin Range, Yellowstone National Park, 1973-1974
Montana State University, 1976
Master's Thesis

LaPointe, Daphne D., Geology of a Portion of the Eocene Sylvan Pass Volcanic Center, Absaroka Range, Wyoming
University of Montana, Missoula, 1977
Master's Thesis

III. RESOURCES MANAGEMENT AND VISITOR PROTECTION

Fritz, William John, Paleoecology of Petrified Woods from the Amethyst Mountain "Fossil Forest", Yellowstone National Park, Wyoming
Walla Walla College, College Place, Washington, 1977
Master's Thesis

Fisk, Lanny H., Palynology of the Amethyst Mountain "Fossil Forest", Yellowstone National Park, Wyoming
Loma Linda University, California, 1976
Ph.D. Thesis

Clarich, Duane A., Physiological Ecology of Aquatic Macrophytes in the Madison River of Yellowstone National Park, Wyoming
Montana State University, Bozeman, 1977
Ph.D. Thesis

DeBord, Phillip L., Gallatin Mountain "Petrified Forests"; a Palynological Investigation of the In Sites Model
Loma Linda University, California, 1977
Ph.D. Thesis

Gennett, Judith Ann, Palynology and Paleoecology of Sediments from Blacktail Pond, Northern Yellowstone Park, Wyoming
University of Iowa, 1977
Master's Thesis

MAINTENANCE

IV. MAINTENANCE

A. Buildings

Five roofs were constructed over trailers throughout the park, and a metal roof was installed on Apartment #034 at Grant Village. Eighteen roofs were repaired in Mammoth, and a new roof was put on the Fechler Ranger Residence and Ranger Station. Nine Trailer-homes were double-roofed at Lake, and the Lake Ranger Station was double-roofed and shingled.

A new stairwell and stairs were constructed in the Supply Center in Mammoth for safe access to the boiler room.

Exterior painting was completed on three apartment buildings at Canyon, and four comfort stations.

Repairs from fire damage in Building #70 were completed with new storage stalls, painting and rewiring.

The interiors of twenty-one comfort stations were rehabilitated at Madison Junction and Grant Village campgrounds.

Sixteen new hose houses were constructed for winter operation at four feet above ground level for deep snow conditions at West Thumb, Old Faithful, Madison Junction and Lake.

B. Energy Conservation (See also "Other" Category)

Eighteen buildings (quarters) in Mammoth and Apartment Building #802 at Canyon were insulated. Ten wood-burning stoves were installed in the Mammoth area and forty-five new storm windows were built and installed in the Mammoth headquarters area.

C. Utilities

A temporary water intake system was constructed at Canyon and put into operation. The regular system at Cascade Creek was shut off due to the possibility of contamination.

Extensive repairs were made to the Grant Village water system. Due to the lack of snow, the major portion of the Grant Village winter system was frozen and broken.

IV. MAINTENANCE

Utilities (continued)

A four-site employee trailer court was built at Tower Fall for Hamilton Store employees. The construction included water, sewer and power.

Three garbage incinerators were eliminated at Mammoth, Bridge Bay-Lake, and Grebe Lake landfills. These were replaced with three 7½-cubic yard compactor trailers, and the refuse hauled to the West Yellowstone landfill and the Livingston, Park County landfill.

D. Roads and Trails

The park crusher crew produced 13,000 cubic yards of 3/4 minus and 3,000 cubic yards of 1/2 chips. The hot mix plant produced 9,000 cubic yards of hot mix for overlay and patching.

One mile of chip seal was completed on Sylvan Pass and two miles of chip seal at Big Hole National Battlefield.

Four miles of half sole was completed between Mammoth and Tower Junction. Two and one-half miles of half sole was completed at the Canyon concession area, two miles between Canyon and Dunraven Pass, and two and one-half miles at the Mammoth concession area.

IV. MAINTENANCE (continued)

E. Construction

Two projects were accepted as being complete during the year: The Golden Gate Bridge (by the Federal Highway Administration) and Infiltration Investigations and Corrections at Lake, Fishing Bridge, Bridge Bay, and Canyon ($200,000). The Golden Gate Bridge opened to the public in July 1977, and was completed in its entirety in October 1977. The Infiltration Investigations and Corrections were completed in July 1977 with the observation of the interior of some 79,000 feet of sewer lines. The location of leaking sewer lines was pinpointed because of this contract and will be corrected by another contract in the future.

Other projects of previous years had some punch-list and warranty work done on them, with the work on the Mammoth-Gardiner sewer completely accepted. The sewage treatment facilities at Canyon, Tower Fall, Lake-Fishing Bridge and Old Faithful operated the entire year, although some minor punch-list items remain partially incomplete.

No construction was accomplished at Big Hole National Battlefield, as the design of the sewage modifications was accomplished for this project.

Preliminary investigations, soil testing, and test wells were accomplished at Canyon, Old Faithful, Mammoth and Norris in preparation for the construction of water treatment facilities. This is being accomplished by an A/E firm, which is also under contract for the remaining water systems in the park.

A contract to be administered by the Federal Highway Administration for the repair of the high bridge over the Gardner River east of Mammoth was awarded to COF Construction of Billings, Montana for $885,293.40. This bridge has had a 20-ton load limit on it for quite some time and is in a partially deteriorated state.

OTHER

V. OTHER

A. Special Activities

Superintendent Townsley has been elected to Associate Membership in the Boone and Crockett Club. In this association, he joins former National Park Service Directors Horace Albright, Newton Drury, George Hartzog, and Conrad Wirth and former Superintendent John McLaughlin (deceased).

During the year, the Superintendent served on the Special Task Force to develop a Servicewide Policy on public use of oversnow machines, and was named to the Special Servicewide EEO Task Force. He also served as Chairman of the Interagency Cooperation Committee for the 1978 National Recreation and Parks Association Midwest Regional Conference. Assisting on this Committee was Concession Specialist Lloyd Surles, former Board Member of NRPA.

During most of August and September, Assistant Superintendent Robert Haraden was absent from the park serving as Captain of the Midwest Intake Interview Team, from which the current group of Intake employees were selected on a nationwide basis. Assistant Superintendent Haraden also participated in planning for the John D. Rockefeller Memorial Parkway, and participated in the Regional Transportation Study.

During the week of April 18-25, Superintendent Townsley and most of the park supervisory staff participated in a Team Building session with R. T. Williams. This was held at the old Blister Rust Control (BRC) dormitories at Canyon.

Superintendent Townsley is a member of the Dean's Advisory Council, School of Forestry, University of Montana.

B. Special Events

Yellowstone hosted a total of 82 groups or 321 special visitors in 1977, of which 33 groups were of an international nature, 15 groups were here for study or research, 10 groups were Congressmen or Congressional aides, 9 groups filmed for television or documentaries, and 8 groups were made up of foreign dignitaries. Twenty-two of these groups were given special tours of various locations in the park. A total of 435 man-hours was spent with 16 of these groups.

V. OTHER

B. Special Events (continued)

In late August, the Princess of Belgium; her son, the future King of Belgium; and their party spent two days touring the park escorted by park personnel. An impromptu luncheon was arranged for them by Ranger (Naturalist) John Whitman at his home.

In late September, Pierre Lotse, Deputy Director of National Parks, Cameroun, Africa; Matta Ngarmadji, Engineer, Department of Parks, Chad, Africa; Mouhamadou Sow, Deputy Director of National Parks, Senegal, Africa; Loro T. Toni, Director of National Parks, Upper Volta, Africa; Mohamat Alahoura, Assistant Director of Tourism, Cameroun, Africa; Paul Gbabir, Game Warden, Nigeria, Africa; L.M.C. Matela-Letsela, Assistant Director of Tourism, Lesotho, Africa; and Guy A. Ramanatsua, Professor of Forestry, Malagasy Republic, Africa, visited the park. A two-day seminar on various aspects of park management, with field workshops in the afternoons, was arranged for them. They also spent several days touring various areas of the park. A special tour of the Bovey Restorations in Nevada City, Montana, was arranged for the group by Management Assistant Berg, who accompanied them on the tour. The group presented a delightful and very informative slide show for park personnel. The group found the seminar and other arrangements very helpful and informative and were very appreciative of all the time and effort expended by park personnel in their behalf.

Congressmen and Congressional personnel who visited the park in 1977 included:

Representative Jim Guy Tucker from Arkansas
Representative Robert W. Edgar from Pennsylvania
Representative Jerry Patterson from California
Representative Ralph Regula from Ohio
Representative Phillip Burton from California
Representative Keith Sebelius from Kansas

Jim Martin, a secretary for Senator Metcalf of Montana
Brian Hallen, Technical Assistant and Enrolling Clerk for the Secretary of the Senate
Frederick Mohrman, Staff Assistant to the House Subcommittee on Interior
Cynthia Wilson, Special Assistant to the Secretary of the Interior

V. OTHER

E. Special Events (continued)

Twenty-five film permits were issued during the year, nine of which were issued to persons or companies from other countries.

C. Media Relations and Public Affairs

During 1977, 35 press releases and five public service announcements were prepared and distributed to media. The media distribution list was revised and updated to be more responsive to the interests and needs of the media and surrounding communities. This was done by means of a questionnaire mailed to the previous media distribution list.

In March, Management Assistant Berg attended the Sports and Recreation Show in Boise, Idaho, where he set up a National Park Service information booth.

In August, Public Affairs Specialist Bywater spent three days with Mason Smith of "Sports Illustrated" and five days with Lee Wulff of "Sports Afield." Both parties were writing articles on Yellowstone fisheries management for their magazines.

In the third quarter of 1977, 66 percent of the responses to Congressional inquiries were on time, with a cumulative total of eight days attributed to late responses. In the fourth quarter, new procedures for handling such inquiries were instituted, with a result of 95 percent of the responses being on time and only one day attributed to a late response.

A significant effort was made to represent the park at meetings of snowmachine organizations, and other winter activity groups in the surrounding states, in order to provide them with accurate and appropriate information about the park and to generate interest in winter activities in the park. Superintendent Townsley was a speaker on the Public Lands Panel at the Montana Snowmobile State Convention in February, and the guest luncheon speaker at the Montana Snowmobile Association District 10 meeting in November. It is interesting to note that approximately 12,000 of the 21,000 snowmobilers in Montana are members of the Montana Snowmobile Association.

V. OTHER

C. Media Relations and Public Affairs (continued)

Superintendent Townsley and Management Assistant Mac Berg attended the Montana Governor's 4th Annual Conference on Travel at Helena, Montana on March 17. Mr. Townsley was the featured speaker at the banquet and chose as his topic, "Yellowstone in a Changing World." The Superintendent was also a speaker on the panel, "Interpreting Increasing Visitation to our National Parks," on behalf of the Wyoming Governor's Conference on Tourism at Casper, Wyoming.

Assistant Superintendent Harman and Chief Park Ranger Siglin attended the Idaho Governor's "Wildlife Tomorrow" Conference in Idaho Falls, Idaho on November 13.

In addition to the above, Yellowstone personnel represented the National Park Service at various other meetings throughout the year, among which were Wyoming Outfitters Association Annual Convention; Wyoming Motel Association; Dude Ranchers 51st Annual Convention; Federation of Fly Fishermen Annual Meeting, and Chambers of Commerce meetings in Wyoming and in Montana communities surrounding the park.

D. Cooperation With Other Agencies

Superintendent Townsley and members of his staff attended United States Forest Service-National Park Service Coordination meetings in Billings, Montana on March 3-4 and in Moose, Wyoming on September 12-13. In addition to the regularly scheduled meetings, the Superintendent meets with Forest Supervisors of the surrounding forests and members of their staffs from time to time on matters of mutual concern.

E. Energy Conservation (See also "Maintenance"-IV-B)

Safety Manager Paul Ellis attended a forty-hour course on Energy and Related Concerns presented at Harpers Ferry Training Center November 14-18, 1977.

A proposal for an Energy Use Study in Yellowstone National Park was submitted to the Department of Energy, Idaho Operations Office (Energy Research and Development Agency-ERDA) in September. They, in turn, forwarded the proposal to their Washington Office for final evaluation. If accepted, the Idaho Office will allocate $30,000 for implementation of

V. OTHER

Energy Conservation (continued)

the study under a cooperative program. The proposal was submitted following a telephone call from Mr. Griffith of the Idaho Energy Office advising that they expected funds and allocation authority for energy programs, with first priority given to federal agencies.

F. Auxiliary Programs

1. Young Adult Conservation Corps (YACC)

The first residential YACC Camp in the National Park Service was started in Yellowstone National Park on November 21, 1977. The program was established by Public Law 95-93 and provides for both resident and non-resident camps.

Twenty Corpsmembers were in camp at Fort Yellowstone working on projects by the end of the year. Job orders for recruitment were placed with Job Service Offices in Cody, Wyoming; Rexburg, Idaho and Livingston, Montana with a request that the Job Service get statewide clearance in all three states for recruitment. By the end of the year, applications were on hand from Idaho, Wyoming and Montana. The age of the Corpsmembers ranges from eighteen to twenty-three years, fourteen of them male and six female.

Meals are provided at an improvised messhall in the Canteen Building, and housing in the Boys' Dormitory (Building # 4) and the Girls' Dormitory (Building # 5). A section of the warehouse is used for a temporary recreation hall. Plans are underway for construction of a messhall, and a dormitory to house 64 Corpsmembers.

The enrolees were assigned to a variety of work projects depending upon their past experience and interests, and upon the needs of the park. These projects included: building, ground, and equipment maintenance; electrical, plumbing, and carpentry; technical laboratory work; and photographic assignments. Two Corpsmembers were assigned as assistant cooks. The projects are supervised by YACC staff and supported by assigned park craftsmen.

V. OTHER

Auxiliary Programs (continued)

In addition to the varied work projects, the Conservation Corps members were given Snowmobile Training, Defensive Driving Training, Winter Survival Training, and Fire Training.

The young people are enthusiastic over the programs and exhibit a spirit of cooperation and a willingness to do their best.

2. Volunteers-In-Parks

The Volunteers-In-Parks program saw increased activity again during 1977, with a total of 119 volunteers participating in the following activities:

Interpretation	72
Natural Science	6
Environmental Science	6
Ranger Assistance	17
Thermal Activities	9
Safety	3
Photo Lab	6

These volunteers contributed a total of [illegible] hours. The program received an allocation from the Regional Office for only $1,099.00, which meant that again this year housing and subsistence payments were inadequate, and many volunteers had to be turned away for that reason. As a result, the major portion of the volunteer staff consisted of concession employees and their spouses, and children and spouses of National Park Service employees.

3. Youth Conservation Corps (YCC)

Two seven-day residential coeducational YCC camps were operated in 1977. One was based in the Blister Rust Control buildings at Canyon, and the other in the old messhall and dormitory at West Thumb.

The total operation of both camps was contracted to the Student Conservation Association (SCA). They provided 14 qualified staff to operate the two camps. There were 26 enrollees selected for the Canyon Camp and 24 for West Thumb. The staff was supplemented by two part-time SCA volunteer park and forest assistants.

V. OTHER

Auxiliary Programs (continued)

In addition to the varied conservation projects completed, all enrollees were given the Multi-Media First Aid course and the Defensive Driving course. Projects consisted of YCC camp maintenance and construction; fisheries habitat and fish trap improvement and removal; trail construction, rehabilitation, and obliteration; trail bridge construction; meadow naturalization, tree planting, and tree removal; and backcountry campsite rehabilitation and improvement.

Appraised value of all projects was $53,[illegible].00 with enrollees expending 11,969 environmental work/learning hours on work projects and training. Direct Bureau (LBS) costs for technical supervision was $766.00.

G. SAFETY

The Safety Program in Yellowstone National Park continues to receive high priority. A full-time Safety Manager remained in residence and spent a large portion of his time out in the park. Parkwide Safety Committee meetings were held monthly. During June through September, these meetings were held at Madison, Canyon, Lake, and Old Faithful, and during the winter [illegible] at Mammoth. Village Safety Committees were formed and meetings held regularly during the summer. Work crew Tailgate Safety meetings were held weekly.

Prior to start of the snowmachine season, training sessions on the maintenance and safety of the machines were conducted at the Vehicle Repair Shop by trained personnel. It is mandatory that any employee who operates a snowmachine must attend these classes. A special Safety meeting for all employees will be held with winter survival as the subject.

Defensive Driving classes were conducted during the year, with 453 employees receiving certificates. All employees have had Defensive Driving. The testing of motor vehicle operators continued during the year, using the Porto-Clinic and Porto-Glare machines.

V. OTHER

Safety (continued)

A comparison of accidents for the past three years is as follows:

	1975	1976	1977
Fatalities	5	2	5
Employee Vehicle Accidents	[illegible]	26	19
Employee Accidents	56	45	39

All fatalities were due to motor vehicle accidents; two motorcycle and three passenger vehicles. A committee of employees was appointed to review each accident.

After each employee motor vehicle accident, a review team meets to discuss the accident, whether or not the accident was preventable, and the appropriate disciplinary action to be taken when warranted.

H. Park Goals

Establishment of park goals continued as an integral part of the Park Management Program. A 70 percent completion rate for the year was attained. Unaccomplished goals are being reviewed to determine if they should be dropped or incorporated in '78 FY Goals.

I. Status of Planning

To date no Congressional action has been taken on the Yellowstone Wilderness Proposal made in 1971. It was sent to Congress in March 1972.

Members of the park staff participated in planning activities for the John D. Rockefeller Memorial Parkway as they related to Yellowstone National Park.

The Draft Statement for Management for Yellowstone National Park received preliminary approval by the Regional Director on January 16, 1976. Since the management objectives had not been changes from the Master Plan, which was approved in 1974, and for other reasons by agreement with the Regional Director, public involvement was not instigated.

V. OTHER

Status of Planning (continued)

Staff members participated in meetings of the Regional Transportation Study.

Planning has proceeded for new water systems at Mammoth and Canyon.

Several meetings were held in connection with renovation of the Museum Building # 1 at Mammoth.

J. Landscape Management

Several significant landscaping projects were completed during the year. Despite many difficulties, an acceptable new Golden Gate bridge was completed. Major new rock walls were constructed at both ends, more rugged in character on the outside than those previously existing, but perhaps more in keeping with the landscape of the Golden Gate Canyon. Great difficulties were encountered in achieving an acceptable top course for these walls, partly because of insufficient availability of weathered capstone. The monolith at the north end of the bridge was successfully relocated approximately 100' north. Regretably, the concrete used for the [illegible] walls was not [illegible]. Design of concrete fins used on the outside face of the bridge deck was poor; only minimal control over fracturing was possible when forms were removed. The west slopes of the Golden Gate Canyon under and immediate to the new bridge were very carefully restored to original grades, the final result being significantly better than that existing prior to reconstruction of the bridge.

A major planning effort was undertaken to ensure an optimum alignment for a detour road around the Gardner River high bridge in anticipation of its closure during scheduled reconstruction of the bridge deck in 1978. Detailed restoration procedures were also developed to ensure restoration to original contour and enhance natural revegetation of the disturbed slopes. At year's end, the bridge contractor submitted a proposal to reconstruct the bridge deck without necessitating construction of a detour road. Following careful analysis by National Park Service and Federal Highway Administration personnel, this proposal was accepted.

V. OTHER

Landscape Management (continued)

Roadside vista clearing was completed from Mammoth to Tower Junction, Tower Junction to Cooke City and Tower Junction to the Unfinished Road on Mt. Washburn. Major vista clearing was accomplished at the Undine Falls and Hellroaring overlooks on the Mammoth-Tower road, and at the Shoshone Lake overlook between West Thumb and Old Faithful.

Hundreds of young lodgepole pine and scattered other evergreen species seedlings were planted by the YCC in old road scars in the West Thumb and Grant Village areas. Unfortunately, because of lack of ground moisture, very few survived.

Preliminary planning was accomplished for a new overlook of Grand Prismatic Spring; a new picnic area at the site of an old campground near the northeast corner of Lewis Lake; a new overlook at the Lehardy Rapids along the Yellowstone River immediately adjacent to a favorite trout jump; a new horse-use trailhead for the Thorofare trail (south of Lake Butte); a new overlook of Hayden Valley, the Yellowstone River canyon and Lake Yellowstone, some three-quarters of a mile southeast of Canyon Junction on the Mt. Washburn trail; and for replacing the Mammoth-Tower aerial telephone line with an underground or microwave system.

The Park Landscape Architect was detailed for two and one-half months in the spring to the Bureau of Outdoor Recreation in Ann Arbor, Michigan to assist in the Detroit/Ann Arbor portion of the National Urban Recreation Study.

K. SIGN PROGRAM

During the year there were several significant developments in Yellowstone National Park signing. The National Park Service Sign System Specifications information symbol (RS-014) was included on new signs for the Madison winter contact station. Use of the campground symbol (RS-038) on new back-country campsite markers was continued. As an experiment, a telephone symbol with arrow was used to sign the public telephone at Canyon Junction for winter users, and standard blue and white hospital "H" signs with arrows were installed at four key intersections during early summer. Both types of signs replaced worded messages, which were

V. OTHER

Sign Program (continued)

proving inadequate. These experiments proved successful, and use of the new signs will be continued.

In recognition of actual pedestrian use patterns, and in conjunction with a revision of the interpretive trail brochure, the Mud Volcano trail sign system was changed, numbered markers being dropped in favor of names of features. Visitors may now start the trail at either end without confusion regarding direction of travel.

Two new road directional signs, and a series of interpretive signs for the Nez Perce Camp trail, including soldiers' movements, Nez Perce tipis, and Howitzer and infantry hat markers, were completed in the park sign shop and installed at Big Hole National Battlefield prior to their centennial celebration.

Several new signs were constructed at the request of park concessioners in an attempt to improve visitor awareness of available concession services. These signs were installed at Grant Village, West Thumb, Fishing Bridge, Old Faithful and Tower/Roosevelt.

An extensive experiment was undertaken in last summer, substituting city destinations outside park boundaries (e.g. Cody, Jackson, West Yellowstone) for park entrances on directional signs at major intersections. The destination, "Old Faithful," was also added to several directional signs at intersections lacking this information. Preliminary evidence indicates these signs significantly improved visitor orientation on the park road system. Refinements of these signs will be tested during the summer of 1978.

Several new road signs were built for Bechler, significantly improving visitor information in that heretofore poorly signed area.

A new sign was constructed under contract from the Forest Service for the Cabinet Ranger Station, Kootenai National Forest.

V. OTHER

L. A Christian Ministry in Yellowstone Park: Gardiner-Mammoth Winter Ministry

These yoked interdenominational ministries are related nationally to "A Christian Ministry in the National Parks."

During the summer of 1977 forty-six college and seminary students worked under the program to provide services of worship and ministry to visitors and park employees. No government funds are provided for support of the Ministry. The program is self supporting, with funds obtained primarily from offerings received at services provided by the Ministry.

A new Resident Director, Pastor Edward Purkey, came to the Ministry in 1977 to replace Pastor Paul Christ, who moved to another location. Ministry and services of worship were provided for residents of the Mammoth community, with services held in the Yellowstone Park Chapel. In addition, the Pastor provided counseling and wedding ministry for twelve couples. Counseling and referral for social problems, assisting stranded visitors, and support for the hospitalized and accident victims, were provided during the summer by the Director and his wife. Interdenominational services of worship were held throughout the park at various locations in the park. Total attendance at the thirty-four services held each Sunday in the summer was over 17,100.

The Ministry sponsored a sixty-five voice choir in the summer, comprised of seasonal employees. The choir presented the "Christmas in August" concert in three areas of the park, featuring Handel's "Messiah."

A winter intern team at Old Faithful Snow Lodge offers weekly services of worship in the Old Faithful area during the winter months.

APPENDIX

YELLOWSTONE NATIONAL PARK
CUMULATIVE TRAVEL BY ENTRANCE STATION
JAN. 1, - DEC.31, 1977
VISITORS-YEAR TO DATE

	ENTRANCE STATION:	TOTAL	NORTH	WEST	SOUTH	EAST	NORTHEAST
TOTAL VISITORS	-1977	2487084	318113	774429	727684	528854	138004
	-1976	2523174	326544	767308	741184	554489	135649
	-1975	2246132	317407	698591	639791	472226	118317
	1976-1977(FOOTNOTE 1)	-36090	-8431	7121	-13500	-25635	2355
	1976-1977(FOOTNOTE 2)	-1.51 %	-2.58 %	0.93 %	-1.82 %	-4.62 %	1.74 %
NON-RECREATIONAL VISITORS INCLUDED IN ABOVE TOTAL							
NON-RECREATIONAL VISITORS	-1977	5151	3551	373	626	207	384
	-1976	5950	3079	1126	556	697	490
	-1975	6649	3073	1335	908	548	733
	1976-1977(FOOTNOTE 1)	-799	472	-753	68	-490	-106
	1976-1977(FOOTNOTE 2)	-13.43 %	15.35 %	-66.87 %	12.19 %	-70.30 %	-21.63 %
RECREATIONAL VISITORS BY METHOD OF ENTRY							
TOTAL RECREATIONAL VISITORS	-1977	2482933	314562	774056	727058	528647	137620
	-1976	2515224	323465	766182	740626	553792	135159
	-1975	2239483	314332	697006	638883	471678	117584
	1976-1977(FOOTNOTE 1)	-37291	-8903	7874	-13568	-25145	2461
	1976-1977(FOOTNOTE 2)	-1.48 %	-2.76 %	1.03 %	-1.83 %	-4.54 %	1.82 %
MOTOR VEHICLE PASSENGERS	-1977	1716917	219047	559553	473365	367588	99359
	-1976	1827094	242841	562306	512685	405098	104164
	-1975	1653371	244053	525727	449414	346702	87475
	1976-1977(FOOTNOTE 1)	-10177	-23794	-2748	-39320	-37510	-4805
	1976-1977(FOOTNOTE 2)	-5.92 %	-9.80 %	-0.49 %	-7.67 %	-9.26 %	-4.61 %
RECREATIONAL VEHICLE PASSENGERS	-1977	661665	85507	163638	226972	148852	36594
	-1976	599662	71339	154503	206610	137465	29245
	-1975	495582	61058	121186	170055	114861	28414
	1976-1977(FOOTNOTE 1)	62001	13748	9135	20362	11387	7349
	1976-1977(FOOTNOTE 2)	10.34 %	19.17 %	5.91 %	9.86 %	8.28 %	25.13 %
USE PASSENGERS-COMMERCIALLY ORGANIZED TRIPS	-1977	36361	5337	14373	12189	5700	762
	-1976	36982	6408	11818	12294	5547	915
	-1975	33883	5832	12009	10990	4033	1019
	1976-1977(FOOTNOTE 1)	1379	-1071	2555	-105	153	-153
	1976-1977(FOOTNOTE 2)	3.73 %	-16.71 %	21.62 %	-0.85 %	2.76 %	-16.72 %

CONTINUED NEXT PAGE

CUMULATIVE VISITORS BY ENTRANCE STATION CONTINUED

JAN. 1, - DEC.31, 1977

ENTRANCE STATION		TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		**********	**********	**********	**********	**********	**********
LOS PASSENGERS - NON-	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
COMMERCIALLY ORGANIZED TRIPS	-1976	[illegible]	1579	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
VISITORS IN PRIVATE	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
OVERSNOW VEHICLES	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
1976-1977(FOOTNOTE 1)		[illegible]		[illegible]			
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SNOWCOACH PASSENGERS	-1977	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]			[illegible]	
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VISITORS ON FOOT OR OTHER	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
**********		**********	**********	**********	**********	**********	**********
[illegible]							
TOTAL VEHICLES	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUTOMOBILES-EXCLUDING	-1977	[illegible]		[illegible]		[illegible]	
RECREATIONAL VEHICLES	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONTINUED [illegible]

CUMULATIVE VISITORS BY ENTRANCE STATION CONTINUED
JAN. 1, - DEC.31, 1977

ENTRANCE STATION:		TOTAL	NORTH	WEST	SOUTH	EAST	NORTHEAST
		**********	**********	**********	**********	**********	**********
RECREATIONAL VEHICLES	-1977	200469	25938	49583	63776	45105	11087
	-1976	181713	21709	46622	62604	41656	8862
	-1975	149076	18496	36723	51531	33716	8610
1976-1977(FOOTNOTE 1)		18776	4229	2761	6172	3449	2225
1976-1977(FOOTNOTE 2)		10.33 %	19.13 %	5.90 %	9.86 %	8.28 %	25.11 %
BUSES - NON-COMMERCIALLY ORGANIZED TRIPS	-1977	2112	235	1107	561	185	24
	-1976	1972	273	927	556	186	30
	-1975	1882	255	954	504	129	40
1976-1977(FOOTNOTE 1)		140	-38	180	5	-1	-6
1976-1977(FOOTNOTE 2)		7.10 %	-13.92 %	19.42 %	0.90 %	-0.54 %	-20.00 %
BUSES - NON-COMMERCIALLY ORGANIZED TRIPS	-1977	774	129	183	263	158	51
	-1976	501	48	104	169	154	26
	-1975	571	62	156	163	151	39
1976-1977(FOOTNOTE 1)		273	71	79	94	4	25
1976-1977(FOOTNOTE 2)		54.49 %	147.92 %	75.96 %	55.62 %	2.60 %	96.15 %
PRIVATE OVERSNOW VEHICLES	-1977	22523	880	17042	3591	1010	0
	-1976	23991	267	21669	1596	457	0
	-1975	24706	635	22018	1575	480	0
1976-1977(FOOTNOTE 1)		-1468	613	-4627	1993	553	0
1976-1977(FOOTNOTE 2)		-6.12 %	229.59 %	-21.35 %	124.72 %	121.01 %	0.0 %
SNOWCOACHES	-1977	703	0	484	239	0	0
	-1976	689	60	330	245	4	0
	-1975	764	106	461	197	0	0
1976-1977(FOOTNOTE 1)		14	-60	84	-6	-4	0
1976-1977(FOOTNOTE 2)		2.03 %	******** %	22.11 %	-2.45 %	******** %	0.0 %
NON-RECREATIONAL TRAVEL (ALL VEHICLE TYPES)	-1977	5151	3561	373	626	207	384
	-1976	5950	3079	1126	558	697	490
	-1975	6649	3075	1385	903	548	733
1976-1977(FOOTNOTE 1)		-799	482	-753	68	-490	-106
1976-1977(FOOTNOTE 2)		-13.43 %	15.65 %	-66.87 %	12.19 %	-70.30 %	-21.63 %

FOOTNOTE 1 - THIS IS THE DIFFERENCE IN NUMBERS FOUND BY SUBTRACTING THE PRIOR YEAR ENTRANCES FROM THE CURRENT YEAR ENTRANCES.
FOOTNOTE 2 - THIS IS THE DIFFERENCE IN PERCENTAGE FOUND BY DIVIDING THE NUMBER ABOVE BY THE PRIOR YEAR.
******** INDICATES THAT THE PERCENTAGE IS NOT MEANINGFUL, USUALLY BECAUSE ONE YEAR OR THE OTHER ENTRANCES WERE ZERO.

U.S. DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE, YELLOWSTONE N.P., OFFICE OF VISITOR SERVICES,(307)-344-7381,EXT.203
DATE RUN: JAN 05, 1978

YELLOWSTONE NATIONAL PARK
MONTHLY TRAVEL BY ENTRANCE STATION
[illegible] 1977
[illegible]

ENTRANCE STATION		TOTAL	[illegible]	WEST	[illegible]	EAST	[illegible]
TOTAL VISITORS	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]		[illegible]	
	-1975	[illegible]	[illegible]	[illegible]			
1975-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]		[illegible]	
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NON-RECREATIONAL VISITORS	-1977	[illegible]	[illegible]			[illegible]	[illegible]
	-1976	[illegible]	[illegible]				[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL RECREATIONAL VISITORS	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUTOMOBILE PASSENGERS	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RECREATIONAL VEHICLE PASSENGERS	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BUS PASSENGERS-COMMERCIALLY ORGANIZED TRIPS	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 1)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-1977(FOOTNOTE 2)		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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MONTHLY TRAVEL BY ENTRANCE STATION CONTINUED
DEC. 1, - DEC.31, 1977

ENTRANCE STATION:		TOTAL	NORTH	WEST	SOUTH	EAST	NORTHEAST
		**********	**********	**********	**********	**********	**********
BUS PASSENGERS - NON-	-1977	0	0	0	0	0	0
COMMERCIALLY ORGANIZED TRIPS	-1976	0	0	0	0	0	0
	-1975	0	0	0	0	0	0
1976-1977(FOOTNOTE 1)		0	0	0	0	0	0
1976-1977(FOOTNOTE 2)		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
VISITORS ON PRIVATE	-1977	6751	456	5286	749	260	0
OVERSNOW VEHICLES	-1976	3305	73	2825	240	167	0
	-1975	4534	189	3807	340	198	0
1976-1977(FOOTNOTE 1)		3446	383	2461	509	93	0
1976-1977(FOOTNOTE 2)		104.27 %	524.66 %	87.12 %	212.08 %	55.69 %	0.0 %
SNOWCOACH PASSENGERS	-1977	1337	0	783	554	0	0
	-1976	483	0	0	483	0	0
	-1975	1172	99	658	415	0	0
1976-1977(FOOTNOTE 1)		854	0	783	71	0	0
1976-1977(FOOTNOTE 2)		176.81 %	0.0 %	******** %	14.70 %	0.0 %	0.0 %
VISITORS ON FOOT OR OTHER	-1977	750	49	468	221	12	0
	-1976	1538	132	1169	133	104	0
	-1975	1079	12	964	43	60	0
1976-1977(FOOTNOTE 1)		-788	-83	-701	88	-92	0
1976-1977(FOOTNOTE 2)		-51.24 %	-62.88 %	-59.97 %	66.17 %	-88.46 %	0.0 %

VEHICLES BY ENTRANCE STATION THIS MONTH

TOTAL VEHICLES	-1977	8270	3800	3637	617	176	0
	-1976	6978	1292	2296	250	132	0
	-1975	5307	1403	3335	309	165	0
1976-1977(FOOTNOTE 1)		1300	2505	1341	367	44	0
1976-1977(FOOTNOTE 2)		108.31 %	197.21 %	58.41 %	146.80 %	33.33 %	0.0 %
AUTO OFFICE EXCLUDING	-1977	2986	2986	0	0	0	0
RECREATIONAL VEHICLES	-1976	1027	1027	0	0	0	0
	-1975	1109	1109	0	0	0	0
1976-1977(FOOTNOTE 1)		1959	1959	0	0	0	0
1976-1977(FOOTNOTE 2)		190.75 %	190.75 %	0.0 %	0.0 %	0.0 %	0.0 %

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MONTHLY TRAVEL BY ENTRANCE STATION SUMMARY
DEC. 1, - DEC.31, 1977

ENTRANCE STATION:		TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RECREATIONAL VEHICLES	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	84	84	[illegible]	0	[illegible]	[illegible]
	-1975	45	45	[illegible]	[illegible]	[illegible]	[illegible]
	1976-1977(FOOTNOTE 1)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1976-1977(FOOTNOTE 2)	-[illegible] %	-[illegible] %	[illegible]	[illegible] %	[illegible] %	[illegible]
BUSES - COMMERCIALLY ORGANIZED TRIPS	-1977	0	0	[illegible]		[illegible]	[illegible]
	-1976	0	0	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	0	0	0		[illegible]	[illegible]
	1976-1977(FOOTNOTE 1)		[illegible]			[illegible]	
	1976-1977(FOOTNOTE 2)	[illegible] %	[illegible] %	[illegible]	[illegible] %	[illegible] %	[illegible] %
BUSES - NON-COMMERCIALLY ORGANIZED TRIPS	-1977	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]					
	1976-1977(FOOTNOTE 1)	[illegible]					
	1976-1977(FOOTNOTE 2)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PRIVATE OVERSNOW VEHICLES	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]			
	1976-1977(FOOTNOTE 1)	[illegible]	[illegible]	[illegible]			
	1976-1977(FOOTNOTE 2)	[illegible] %	[illegible] %	[illegible] %	[illegible] %	[illegible] %	[illegible] %
SNOWCOACHES	-1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	-1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	1976-1977(FOOTNOTE 1)	[illegible]					
	1976-1977(FOOTNOTE 2)	[illegible] %	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NON-RECREATIONAL TRAVEL (ALL VEHICLE TYPES)	-1977	[illegible]	[illegible]	[illegible]			
	-1976	[illegible]	[illegible]	[illegible]		[illegible]	
	-1975	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
	1976-1977(FOOTNOTE 1)	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
	1976-1977(FOOTNOTE 2)	[illegible] %	[illegible] %	[illegible]	[illegible]	[illegible]	[illegible]

FOOTNOTE 1 - THIS IS THE DIFFERENCE IN NUMBERS BETWEEN [illegible] ENTRANCE [illegible] THE CURRENT YEAR.
FOOTNOTE 2 - THIS IS THE DIFFERENCE IN PERCENTAGE FOUND BY DIVIDING THE [illegible] BY THE PRIOR YEAR.
******** ASTERISKS [illegible] THAT THE PERCENTAGE IS NOT [illegible] BECAUSE THE PRIOR ENTRANCES WERE ZERO.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE, YELLOWSTONE NATIONAL PARK, OFFICE OF [illegible] (2-7) [illegible]
[illegible] 1, 1978

1977 TRAVEL SURVEY - BY STATES

A survey of the state of origin of all private noncommercial vehicles entering Yellowstone National Park was made by all entrances on July 24, July 27, and August 5, 1977. A total of 21,666 vehicles was included in the survey. The results of the survey are as follows:

	STATE	PERCENT
1.	California	11.60
2.	Montana	6.41
3.	Canadian Provinces	6.25
4.	Utah	5.94
5.	Illinois	4.86
6.	Colorado	4.18
7.	Wyoming	3.68
8.) Tie	Idaho	3.64
9.)	Michigan	3.64
10.	Ohio	3.48
11.	Minnesota	3.34
12.	Washington	3.17
13.	Wisconsin	2.97
14.	Texas	2.85
15.	New York	2.79
16.	Iowa	2.68
17.	Pennsylvania	2.25
18.	Nebraska	1.82
19.	Missouri	1.77
20.	Oregon	1.74
	TOTAL	79.06

The remaining vehicles, representing 20.94 percent of the total entered in the following order:

21.	Florida	37.	Tennessee
22.	Arizona	38.	Kentucky
23.	Indiana	39.	New Mexico
24.	Kansas	40.	Foreign (other than Canada)
25.	New Jersey	41.	New Hampshire
26.	Massachusetts	42.	South Carolina
27.	Maryland	43.	Mississippi
28.	South Dakota	44.	Arkansas
29.	Connecticut	45.	Alabama
30.	Oklahoma	46.	West Virginia
31.	North Dakota	47.	Rhode Island
32.	Virginia	48.	Alaska
33.	Louisiana	49.	Delaware
34.	Georgia	50.	Vermont
35.	Nevada	51.	Maine
36	North Carolina	52.) Tie	Hawaii
		53.)	Washington, D.C.

Prepared by Richard H. Higel

TRAVEL TABLE
Yellowstone National Park

The number of visitors during the period between the establishment of the park (1872) and the beginning of this compilation (1895) was estimated to be not less than 1,000 nor more than 5,000 each year.

Year	Visitors	Year	Visitors	Year	Visitors
1895	5,438	1930	227,901	1960	1,443,283
96	4,659	31	221,248	61	1,524,066
97	10,680	32	157,624	62	1,925,227
98	6,534	33	161,938	63	1,872,417
99	9,579	34	260,775	64	1,929,316
		35	317,998	65	2,062,475
1900	8,928	36	432,570	66	2,130,313
01	10,769	37	499,242	67	2,210,023
02	13,433	38	466,185	68	2,229,657
03	13,165	39	486,936	69	2,193,894
04	13,727				
05	26,188	1940	526,437	1970	2,297,290
06	17,182	41	581,761	71	2,120,487
07	16,414	42	191,830	72	2,246,827
08	18,748	43	64,144	73	2,061,537
09	32,545	44	85,347	74	1,937,768
		45	178,296	75	2,246,132
1910	19,575	46	814,907	76	2,525,174
11	23,054	47	932,503	77	2,437,084
12	22,970	48	1,013,531		
13	24,929	49	1,133,516		
14	20,250				
15	51,895	1950	1,109,926		
16	35,849	51	1,166,346		
17	35,400	52	1,350,295*		
18	21,275	53	1,326,858		
19	62,261	54	1,328,893		
		55	1,368,515		
1920	79,777	56	1,457,782		
21	81,651	57	1,595,875		
22	98,225	58	1,442,428		
23	138,352	59	1,408,667		
24	144,158				
25	154,282				
26	187,807				
27	200,825				
28	230,984				
29	260,697				

*Beginning in 1952 the figures represent travel during the calendar year instead of the period October 1 to September 30 as previously used.

SEPARATION SHEET Yellowstone NP
Archives

Type and Number of Item(s) (map, newspaper, clipping, photograph, etc.)

9 Black + White Photographs

Description of Item(s) (include dates, names, topics, etc.)

- Park Staff
- YCC crews
- Skiers
- Snowmobilers
- Warming huts
- See photocopies

Condition of Item(s)

fair

Item(s) Originally Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

1977 Superintendents Annual Report

Item(s) Now Filed (specific location: room #, unit #, shelf #, collection name, box #, folder #, etc.)

photo Archives.

Separated by (name, title, and office)

A. Olmy

Separation Date:

7-30-03

YACC Camp Director John Barham and Supt. Townsley welcoming first group of YACC enrolees-10/21/77. l.-r. John Barham; Supt. Townsley; Don Singleton; Jim McClair; Doug Coy. On table-historic photos of CCC Camps in park in 1920's.

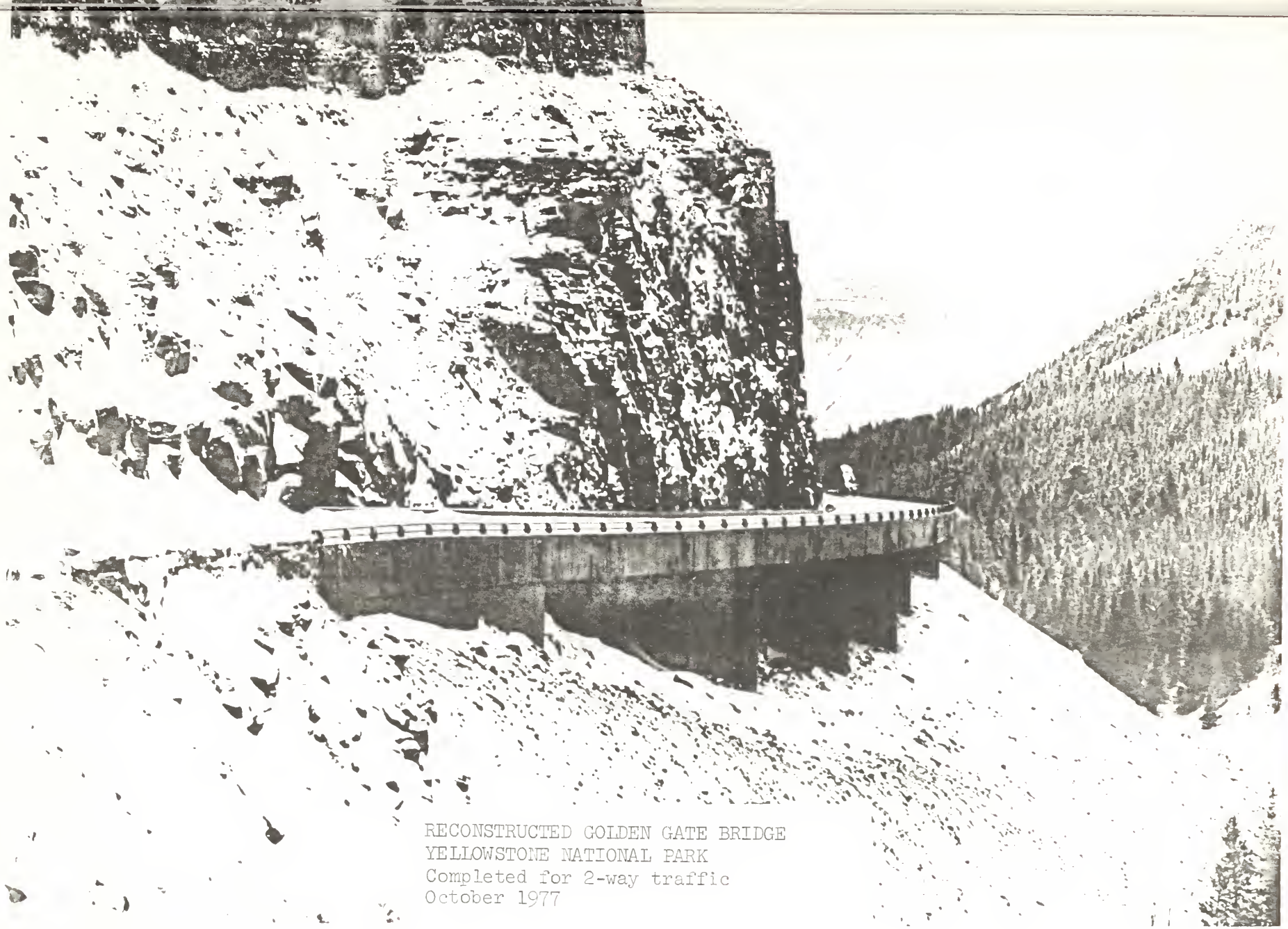
YACC Group at Work - 1977
Clearing Site for Concession
Dormitories - Old Faithful
Yellowstone National Park

Visitor at Canyon Warming Hut
Yellowstone National Park
Winter 1977

Visitor Group at Warming Hut
Madison Junction
Yellowstone National Park
Winter 1977

Ski Group - Swan Lake Flat
Yellowstone National Park

Montana Snowmobile Association group
in Yellowstone National Park



RECONSTRUCTED GOLDEN GATE BRIDGE
YELLOWSTONE NATIONAL PARK
Completed for 2-way traffic
October 1977

1-9-7-8

A-N-N-U-A-L R-E-P-O-R-T

O-F T-H-E

S-U-P-E-R-I-N-T-E-N-D-E-N-T

Y-E-L-L-O-W-S-T-O-N-E N-A-T-I-O-N-A-L P-A-R-K

YELLOWSTONE
NATIONAL PARK
LIBRARY
9732

John A. Tomsley

Date: February 26, 1979

YELLOWSTONE
NATIONAL PARK
LIBRARY

C-O-N-T-E-N-T-S

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APPENDIX

Cumulative Travel Tables - January 1, 1978 to December 31, 1978

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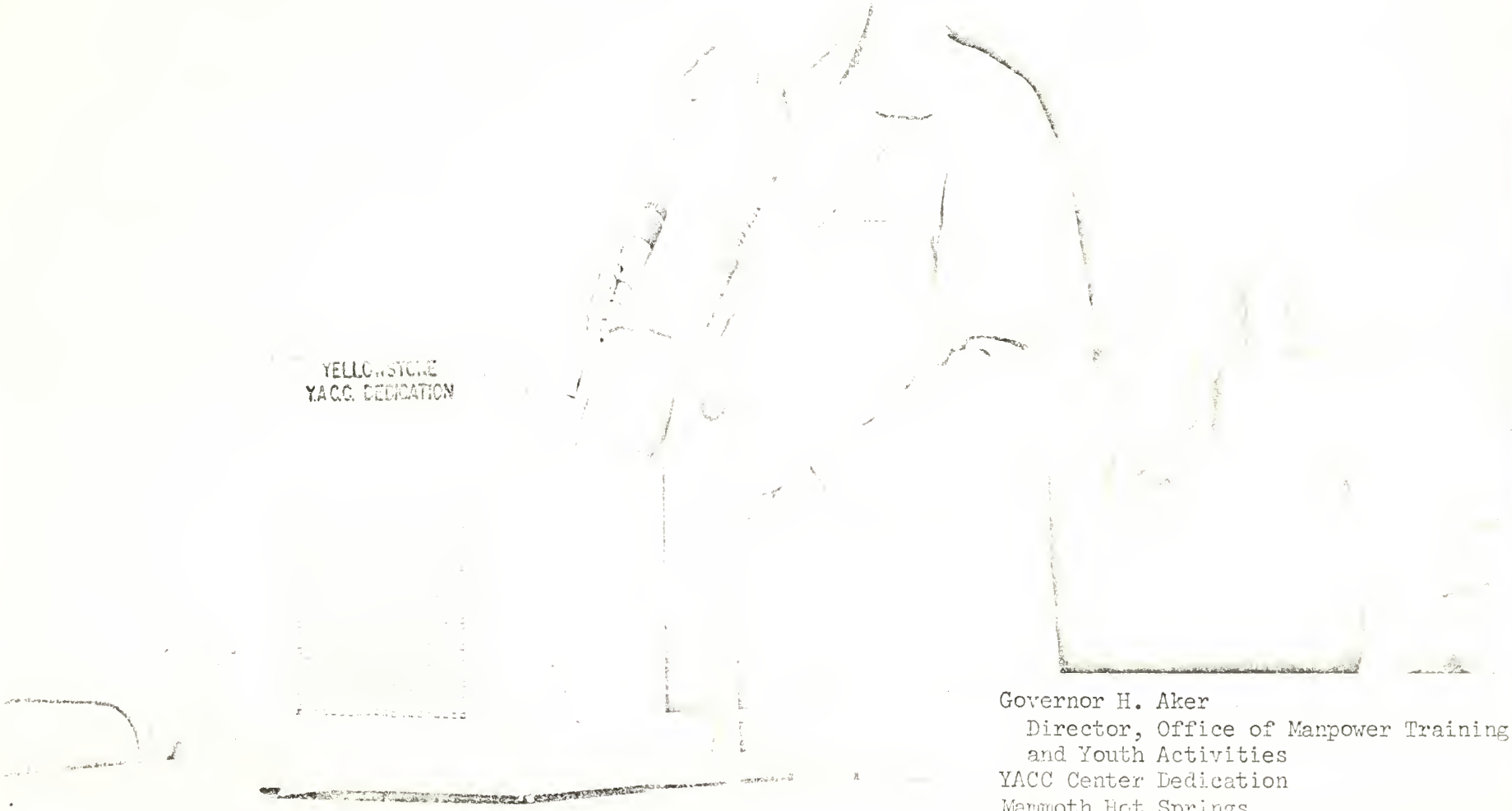
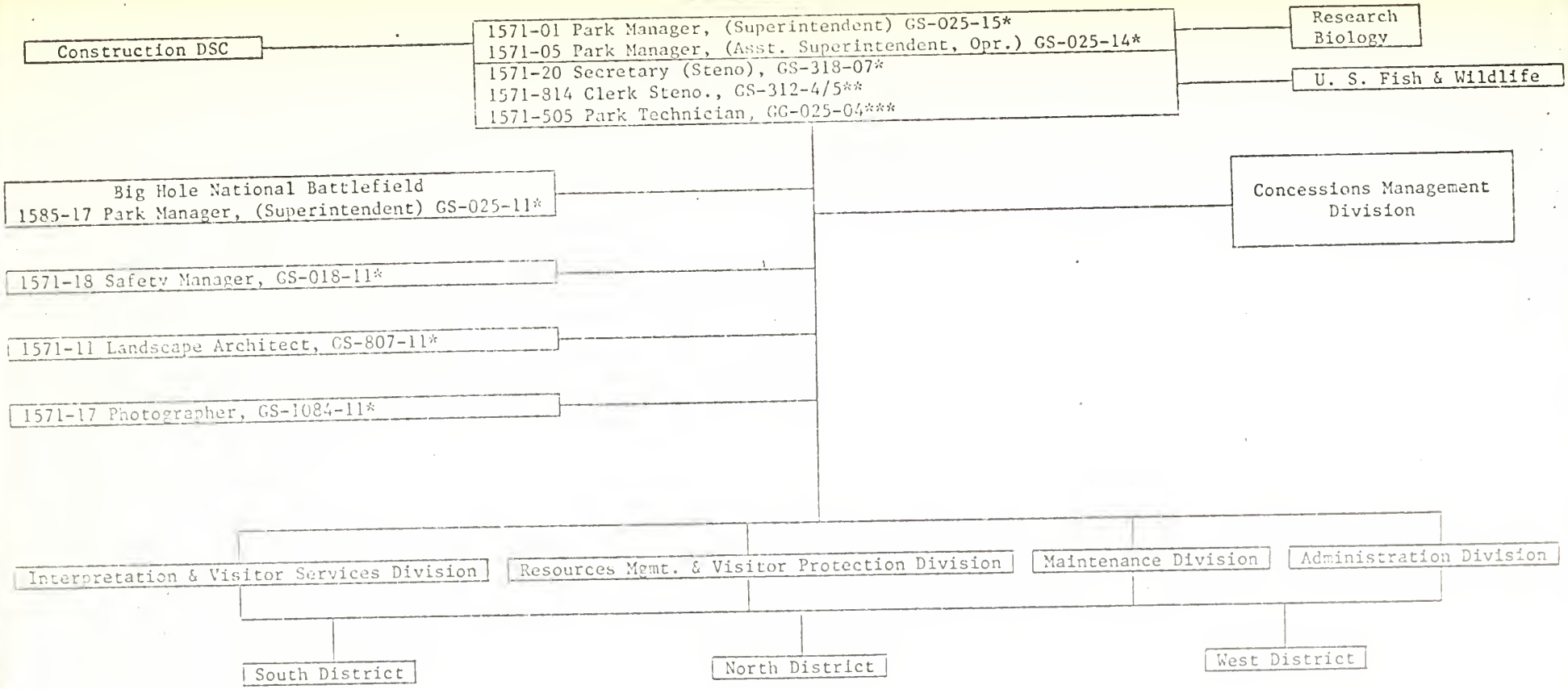


Governor H. Aker
Director, Office of Manpower Training
and Youth Activities
YACC Center Dedication
Mammoth Hot Springs

ORGANIZATIONAL CHART
YELLOWSTONE NATIONAL PARK



*Permanent
**Subject-To-Furlough
***Seasonal

SUPERINTENDENT'S ANNUAL REPORT - YELLOWSTONE NATIONAL PARK - 1978

I. ADMINISTRATION

A. Personnel: Nineteen-hundred and seventy-eight represented a year of change for the Personnel Office. Mr. Daniel I. Duran, transferred to the Fish and Wildlife Service in Albuquerque, New Mexico in September 1977. Mrs. Peggy Parker, Personnel Management Specialist, transferred to the Department of Energy in Laramie, Wyoming in January 1978. The park was without a Personnel Management Specialist for a period of several months. Mrs. Nancy McBeen reported as Personnel Officer in March 1978, transferring from the Department of Health, Education and Welfare Regional Office in Seattle, Washington. Mr. Bruce Ward, from the Veterans Administration Hospital in Asheville, North Carolina, was selected for the Personnel Management Specialist, GS-9 position. Subsequent to this, Mr. Ward transferred to the Bureau of Indian Affairs in Gallup, New Mexico in November 1978. That position is presently vacant.

Early in 1978, the Personnel Office was reorganized due to workload increases, and the following selections were made: Madeline Hall, Staffing Assistant, GS-6/7; Betty McGowen, Personnel Assistant, GS-5/6; April Carr, Personnel Clerk, GS-4/5; Evelyn Pope, Personnel Clerk, GS-3/4.

The reorganization of the Personnel Office included not only a redesigning of jobs, but also a change in the physical layout of the office to enhance the aesthetic appearance and efficiency of operation. A new lock was installed on the files room to increase security for the Official Personnel Folders. Some of the filing system of the office was revamped to make information more easily accessible. We will be continuing this project in 1979.

The Maintenance Division was reorganized during 1978, as a result of the Personnel Management Evaluation in 1977, which found many maintenance employees to be overgraded and a few undergraded. The reorganization also created some new supervisory positions, which opened up promotional opportunities for maintenance employees.

A Special Emphasis Personnel Management Evaluation was conducted in the park by the Civil Service Commission and the Rocky Mountain Regional Office in May 1978. A final report on the evaluation has not yet been released.

In October 1977, the Civil Service Commission delegated authority to agencies to recruit for temporary wage grade positions. During 1978, the Personnel Office issued and processed 60 recruiting bulletins and 45 vacancy announcements. This represents an increase in staffing workload of 100 percent.

Due to the impact on seasonal operations of the temporary wage grade authority, the Personnel Office is in the process of setting up a Special Examining Unit (SEU) which will allow the park to issue Civil Service certificates for many of the temporary wage grade positions, and will allow more flexibility in meeting seasonal manpower needs. This will add some workload to the Personnel Office operations, but this can probably be accomplished within existing staffing.

Another factor which has had an impact on the Personnel Office workload is the YACC Program. While the Corpsmembers are not federal employees, but paid out of CETA funds, the YACC staff members are federal employees working in the excepted service. The Personnel Office was given personnel authority over these 13 staff positions, and in addition handles Workers' Compensation cases for all Corpsmembers.

Fifteen positions were announced for YACC during 1978 and 31 Workers' Compensation cases were processed. This was accomplished without any additional staffing.

The centralized seasonal employment system created several problems in 1978, due to confusing filing instructions and late receipt of hiring packets by our Highly Recommended for Rehire Employees. These problems resulted in four grievances being filed by seasonal employees. Several changes have been made to the 1979 system, which may alleviate some of these problems in the future.

Workers' Compensation: One hundred and twelve Workers' Compensation cases were processed during 1978 as compared to 43 cases in 1977. This represents a 164 percent increase. This dramatic increase is attributed to the changes in Continuation of Pay (COP) entitlement. At present the Workers' Compensation Program in the park requires a half person-year to administer.

Training: During 1978, 243 employees attended formal training courses. One Civil Service course was presented onsite. Twenty-seven other on site courses were presented by the National Park Service and 25 contract technical courses were attended.

Supervisory Training: In August 1978, the Personnel Office undertook an indepth study of the status of supervisory training needs in the park. The study revealed that out of 60 supervisors, 15 had not met the basic 80 hours of supervisory training required in FPM Chapter 410. Twenty-five supervisors had 80 hours, but were deficient in several of the eleven required content areas. Supervisory training records were developed for each supervisor. Division Chiefs were consulted regarding the training needs of their supervisors, and a training course was contracted with the Department of the Interior in late November to meet some of the needs identified by the study. Twenty-two supervisors completed supervisory training, Part B. A second course is planned during 1979.

B. Awards: Six employees received Special Achievement Awards totaling $900. The recipients were:

Helmer Jensen	$125
Jerry Cantu	125
Victor Berg	125
Donald Sessing	125
Paul Schullery	200
Linda Young	200

Twenty-two Length-of-Service awards were presented during the year.

C. Union Management: The Labor-Management meetings, which occurred on a regular basis, provided a useful medium for exchange of views on issues of concern to both Union and Management. Park budget problems were communicated to Maintenance employees and Union representatives were officially present at these meetings. Issues involving YACC enrollees working in Maintenance were also discussed in meetings with employees.

D. Equal Employment Opportunity: The seasonal employment goals for minorities and women were not met this year in spite of increased recruitment efforts. None of the minorities interviewed appeard on the registers from which selections were made. Rehires of some minorities and women helped to maintain the percentages we did achieve. Employment of women was increased from 15.7 percent to 16.4 percent; however, minority employment decreased from 4 percent to 3.6 percent.

A breakthrough in employment of women was accomplished during the year with employment of women in the following permanent positions: Personnel Officer, GS-11 and Budget Analyst, GS-5/7/9.

Four EEO Committee member slots were up for election in 1978. One EEO Counselor resigned and a replacement has not yet been

selected. All four Counselors attended training in 1978.

A progress report was issued by the EEO Committee Chairman in October 1978. The report was generally favorable. As a result of that report, recommendations were made to amend the 1978-1979 Affirmative Action Plan.

E. Budget and Finance

Funding - Yellowstone National Park - FY 1979

General Management	$ 414,500
Interpretation	435,500
Resource Management and Visitor Protection	1,459,500
Administration	598,800
Research Biology	154,800
Maintenance of Roads and Trails	2,204,200
Maintenance of Building, Utilities and Grounds	2,567,300
Motor Vehicle Operation and Replacement	999,800
Fee Collections (Includes $4,900 for purchase and depreciation of equipment)	391,100
Educational Expenses - Children of Employees, Yellowstone National Park (includes $40,000 for reroofing of Mammoth School)	410,000
* Quarters Maintenance and Operation (financed from rents paid by employees)	440,600
* Sanitation Collection and Disposal (solid waste) This is portion of total expense paid by concessioners and quarters.	108,400
* Water and Sewer Expense. Portion paid by concessioners and quarters.	103,200

* Not financed from appropriated funds. The government's share of the cost of operation of utilities is included in Maintenance of Buildings, Utilities and Grounds.

These were beginning of Fiscal Year funding. The park has been advised that there will be withdrawals of funds for all vacant full-time positions for the period of lapse. (As of this writing, there were 22 positions actually vacant as of 01/17/79.

F. Concessions

1. Concessions Management: Mr. Lloyd E. Surles was named Chief of Concessions in Yellowstone during the month of April, but has since transferred to the Washington Office as Chief of Concessions for the National Park Service. Mr. Malcolm J. Berg has been Acting Chief of Concessions with Mr. Joseph F. Alston and Mr. Richard W. Hayes as the Concessions Specialists for the division.

This year a newly implemented Concessioner Evaluation Program went into effect. The program made it possible for the Concessions Management Office to closely monitor all phases of concessioner operations. As a result of this program, the Director of the National Park Service announced that the Yellowstone Park Company had been found unsatisfactory and that proceedings would begin to terminate their contract. Funds were requested during the 1980 Fiscal Year to purchase all of the Yellowstone Park Company assets.

The National Park Service built four new dormitories to house Yellowstone Park Company employees. Two of these dormitories were built at Old Faithful, one at Lake and one at Mammoth.

2. Concessioners: Mr. John D. Amerman has retired from his position as President and General Manager of the Yellowstone Park Company. Mr. Raymond E. Johnston has been named as his replacement.

The Yellowstone Park Company reported that during the 1978 season a total of 683,797 overnight guests stayed in their facilities. This is compared to 651,569 during 1977. The company served a total of 3,993,891 meals during 1978.

Mr. Trevor S. Povah is retiring from his position as President of Hamilton Stores, Incorporated.

Hamilton Stores reported that their sales were up 7.89 percent during the 1978 operating season.

Yellowstone Park Service Stations sold 4,044,428 gallons of gasoline during the 1978 operation. They sold 4,281,483 gallons during 1977, for a decrease in sales of 4.13 percent.

II. INTERPRETATION AND VISITOR SERVICES

A. General Interpretation: The year 1978 was a year of high output of services and diversity of activities for the public. All permanent positions were filled for most of the year; the seasonal staff of 53 persons was strong in quality, but below the optimum number. The staff was composed of the following:

1. Supervisory-Permanent

   a. Alan Mebane - Chief
   b. John Tyers - Assistant Chief
   c. Joe Halladay - West District
   d. Frank Walker - South District
   e. Tony Dean - North District/Historian
   f. Margaret Short - Old Faithful

2. Non-supervisory - Permanent and Subject-to-Furlough

   a. Ron Thoreson - Intake Trainee
   b. Linda Miller - Secretary
   c. Linda Young - Curator (STF)
   d. Bill Lewis - Oral Communication Counselor (STF)

3. Supervisory Seasonals

   a. Ted Parkinson (STF)
   b. Bill Baker (STF) - Tower
   c. Dick Townsend (STF) - Tower
   d. Tom Pittenger - Old Faithful
   e. John Whitman - Mammoth/Norris
   f. Ed Leigh - Grant
   g. Noel Ary - Canyon
   h. Cawood Gilbert - Canyon
   i. Harlan Kredit - Fishing Bridge

4. Non-supervisory Seasonals: 43 (15 new in 1978), includes two hired through the Cooperative Education Program.

5. Student Conservation Association Aides - 3

6. Intern - 1 (University of Washington)

The permanent staff increased by the addition of an Intake-Trainee position. Ron Thoreson came to Yellowstone from his temporary position with the National Visitor Center in Washington. The redesigned Curator position (Museum Aide) position was filled on a 35 hour per week basis with Linda Young. The Historian, Tony Dean, accepted a promotion and transfer from Yellowstone to Albright Training Center, effective January 1979.

For the second year, the Division provided a staff member on a cooperative basis to the Division of Concession Management for several weeks. He helped to conduct frequent orientation and training sessions about the park for Yellowstone Park Company employees.

A contract for the adaptive restoration of the Mammoth Museum Building Number 1, was awarded to Cillison Construction Company of Denver in October. Work began early in November, with a completion date of May 20, 1979. The building was vacated in August, with most of its furnishings and museum collection placed in the storehouse. The Yellowstone archives were transported to the vault of the Buffalo Bill Historical Center in Cody, Wyoming, for storage during the construction period. A temporary information center was set up in the Chittenden Building at Park Headquarters.

The new film on the growth of the National Park idea for the new museum began to take shape. The National Park Service is making the film with its Harpers Center Ferry staff. The Yellowstone Library and Museum Association contracted with William Everhart to write the script, and the National Park Service made arrangements for Margaret Murie to serve as Narrator.

The Yellowstone Institute, sponsored primarily by the Yellowstone Library and Museum Association (YLMA), had a successful year. Its 101 students took 125 seminars, with the majority taking them for college credit. A grant of $5,000 was received from the Department of Energy because of their mutual interest in some of the courses. A new Director, Dr. Tim Clark, was hired when the contract with Hugh Crandall expired.

There is now a cooperative venture to operate a winter information center outside the park, in the town of West Yellowstone. The center, located in the former bank on Yellowstone Avenue, is jointly leased by the Yellowstone Park Company and the Yellowstone Library and Museum Association. It is operated by the Yellowstone Park Company and the National Park Service between mid-December and mid-March. A joint snowmobiling map was also produced through contributions and efforts by the West Yellowstone Chamber of Commerce, Snowmobile Club, YLMA, the U.S. Forest Service, and the National Park Service. There is a strong cooperative feeling among these groups, and the visitors are benefitting greatly.

Winter interpretation was also expanded at Canyon. The "warming hut" was modified to provide food service by the concessioner. Guided snowmobile trips are offered daily and

a weekly trip from Tower to Canyon. The parkwide series of winter exhibits was improved and expanded.

B. District Interpretive Activities -- North District

Mammoth: The Mammoth staff consisted of seven seasonal naturalists, including one supervisor, plus one Student Conservation Aide and one intern from the University of Washington. The Mammoth Visitor Center was open daily throughout the year until Labor Day when the building was closed for renovation. The District Office Building - "Pagoda", was used as an information station for the remainder of the year. Visitor Center attendance for the year was 157,180, and the audio-visual program was presented 1,652 times to 23,792 visitors.

Preparing the Mammoth Visitor Center for renovation proved to be a monumental task. Everything had to be moved out and new storage areas established for the reference library, the museum collections, and the archives. The park photographer and office of the YLMA Business Manager, as well as the interpretive staff, were also relocated. Park Historian Tony Dean with the help of his staff, the Regional Museum Curator, and personnel from Harpers Ferry Center, did an excellent job of making this transition as smooth as possible.

Interpretive activities at Mammoth included the Upper Terrace Walk offered six times weekly and attended by 1,876 people. The popular Fort Yellowstone Walk was offered three nights a week and was attended by 824 visitors. Evening programs presented nightly at the Mammoth Campground, 5 nights at the Mammoth Motor Inn, and 7 nights a week at the Indian Creek Campground, were attended by 22,647 visitors. The Park Historian, as well as the Assistant and Chief Park Naturalist, participated in presenting evening programs in the North District.

Norris: Steamboat Geyser regained its title as the world's largest active geyser in 1978 with two major eruptions on March 28 and August 23. These eruptions occurred after nine years of dormancy and were given national press coverage.

The Norris Sub-District staff consisted of four seasonal interpreters who were supervised directly from Mammoth. The visitor season ran from the middle of May through September. The museum remained the focal point of activity with visitation estimated to exceed 475,000 visitors.

Four daily guided basin walks were offered to 11,044 visitors. Campfire programs were offered each evening with total

participation of 8,285 park visitors. Roving contacts in the Norris area by the interpretive staff included 30,961 visitors. Six Bird Walks during July and August were offered to 44 visitors. Thirteen Kids' Walks were offered to 208 youngsters during July and August. A real crowd pleaser was the Norris Night Walk given fifteen times to 710 visitors. Paint Pot Potpourri was offered 17 times during July and August as a pristine geyser basin walk to 264 visitors. In August, Naturalist Rick LoBello tried an informal morning get-together at the campground where visitors were invited to drink coffee and hot chocolate and ask questions and discuss plans for the day with the Naturalist. This program was given five times with 89 people responding.

Tower: Only one seasonal naturalist was stationed in the Tower Falls area due to manpower cutbacks. A relief naturalist was sent from Mammoth to cover Bill Baker's lieu days and provide roving contact to the Tower Falls area on three days. Nightly campfire programs were at the Tower Campground each week with a total of 4,102 visitors in attendance. The popular Fossil Forest Hike up Specimen Ridge was given twice a week to 375 visitors and the Lost Lake Nature Walk twice a week to 295 people.

Madison: The operation of the Madison Junction Warming Station was again very successful. Uniformed personnel were on duty at the facility from about 9:00 a.m. until noon, and from mid-afternoon until after sundown. These are the periods when the bulk of the traffic enters and leaves the park respectively. The personal contact has been very helpful to park visitors in better understanding and appreciating wintertime in Yellowstone. Through information gained, many snowmobilers decided to extend their trip to include the Norris and Canyon areas.

West Yellowstone: Throughout the winter season of 1977-78, naturalist programs were given in the Rainbow Room of the West Yellowstone Convention Center on Friday and Monday evenings. Attendance was only moderate, but those who came expressed sincere appreciation. It was decided that a better facility was needed and the program should be expanded. Also, it was felt that a better park map was needed for use in the winter program throughout the park.

Consequently, a number of good things have been initiated for the 1978-79 winter season. A new map has been produced cooperatively by the National Park Service and the Gallatin National Forest office in West Yellowstone. The West Yellowstone Chamber of Commerce and the West Yellowstone Snowmobile Club have helped defray the expenses. The map shows

Yellowstone National Park on one side and the town of West Yellowstone and the surrounding Gallatin National Forest on the other side. Snowmobile routes, ski trails, scenic attractions, facilities and services are shown to aid the winter visitors in planning their time while in the area.

To provide greater assistance to visitors coming to Yellowstone during the winter and to consolidate the services offered, the National Park Service and the Yellowstone Park Company jointly rented the old First Security Bank building across the street from the Convention Center. This attractive building is serving as the Travel and Information Center and the snowcoach terminal for the Yellowstone Park Company, as well as an Information Center for the National Park Service. It also serves as terminal for Greyhound buses. Audio-visual programs are offered periodically throughout the day and during the evening, and booklets on Yellowstone Park are available for purchase. Exhibits on snowmobiling safety and an orientation map have also been installed.

A staff of park aides assist in the operation of the entrance station and the information center. Duty also includes roving contact with winter visitors in the motels, on the trails and around town.

Old Faithful: Interpretive staffing for the winter season consisted of the Sub-district Naturalist and 3 seasonal naturalists. The Park Geologist was converted to the Resource Management and Visitor Protection Division, but continued to work closely with the naturalists. Two split naturalist/maintenance YACC positions were established and worked fairly well. (One corpsmember was transferred out of Yellowstone after approximately three weeks at Old Faithful)

The summer seasonal staff consisted of twelve GS-4 and 5 naturalists, one GS-7 supervisor, and one Student Conservation Aide. This represents one seasonal less than 1977, which was itself down from 1976. One of the GS-4 naturalists was a participant in the Student Cooperative Education Program and thus was not recommended for retention in the program. Tom Pittenger was promoted to a GS-7 and assigned to Old Faithful to provide necessary supervisory and planning assistance mid-May through September. Further assistance was provided by VIP's whose most significant contribution was in thermal observations. They also helped the naturalists in special walks (Mud Pot Special, Children's Walks, etc.) and campfire programs. Volunteers were not used this summer at the visitor center information desk.

During the 1978 winter season, needed additions were made to the park Master Slide File and Old Faithful slide collection. Black and white photos were also taken, prepared and mounted in the visitor center lobby. The Upper Geyser Basin brochure map and text were revised, and the booklet reprinted. The revised Studies Along the Firehole was also reprinted.

The Old Faithful Visitor Center was opened for spring on April 11. Guided walks were begun in May. In June, the 4-day parkwide training was supplemented by four days of local Old Faithful training, including eight hours of defensive driving. Also in June, the book display shelves and storage counters, designed and built during the winter, were installed away from the congested information desk. (They were put in storage for the winter). YLMA sales clerks were hired to take care of sales and bookkeeping. There was a considerable rise in book sales, and concurrently the naturalists and the information desk were better able to respond to the visitor's needs.

Also easing the load on the naturalist staff was the transfer of the backcountry permit issuance operation from the visitor center to the ranger station. Although tried prior to 1976, this system met with greater success in 1978 because of expanded ranger station hours, better training and increased park aide staffing.

The decrease in seasonal naturalist staff along with an increase in scheduled time for roving resulted in an approximate 7.5% reduction in guided interpretive walks (a continuation of an earlier trend.) Demand for walks remained high, however, and reservation lists were generally filled well in advance. Because of the small size of the visitor center auditorium, (seating 100) and the excessive crowds for the evening programs, two presentations were given nightly July through August. Attendance at each still ran over 100, yet this was a worthwhile improvement over previous years and should be continued. Foreign language walks were offered only in French; an interpreter fluent in German is needed for the 1979 season. Innovative programs, such as the Chambermaid Tour of the Inn, were continued and refined during the year. A new living history slide program replaced an earlier traditional historical evening presentation, and was well received. Several informal star talks were offered after the Madison campfire programs during the peak of the meteor showers.

Budgeting restrictions caused a slight reduction in staffing in October. A priority was placed on visitor center

operations, and evening programs could not be offered. The visitor center closed for the season on November 1.

The chronic failures of the geyser prediction board in the visitor center continue to be a concern. Parts for the Italian-made equipment are nearly impossible to acquire. Motorola has submitted a plan for digital tv-like viewers which could be installed in various locations within the Old Faithful area such as the Inn, Lodge, Ranger Station, etc. Down-time on the current board necessitates that action be taken as soon as possible to correct the situation.

The year 1978 has been a particularly active year in the geyser basins, enhancing the interpretive potential. Giant Geyser erupted on September 9, after 23 years of inactivity. In the Lower Basin, Morning Geyser became a regular erupter after years of very rare activity. Nearby Silex Spring became a very regular geyser, erupting approximately every two hours. Daisy Geyser, after a 10-year period of inactivity, began erupting about every 80 minutes in March (following a series of 130 felt tremors), and has taken Great Fountain's (now less regular) position on the prediction board. We look forward to another active year for visitors and geysers in 1979.

General: Grant Village was returned to the South District in late March. Winter interpretation at Canyon continued to be emphasized and expanded successfully. A new supervisor at Fishing Bridge, Harlan Kredit, was selected and the Assistant South District Naturalist position was very capably filled by veteran Ted Parkinson. Ted concentrated his efforts on the training of new employees and on auditing of programs. His high standards were an inspiration to all.

Budgetary problems continued to plague the district as new increased uniform allowances had to be absorbed. New uniform allowances amounted to $3,500, which was $3,500 over our program.

Twelve of nineteen district goals for the year were 100 percent completed, and two others partially completed. Some of the accomplished goals included adding more 7:00 p.m. family programs, scheduling an additional 40 hours of roving duty per week, rehabilitation of the Mud Volcano trail system, production of a new local guide to the Lake/Fishing Bridge area, and additional district-wide training.

The Co-op program was tried with minimal success at Grant Village. Overall it was a productive year, although unfortunately, staff members continued to do more and more with less and less. Of eight new interpreters hired this year, seven

did an outstanding job and were highly recommended for rehire.

Winter Interpretation: In the Canyon area, we have gone from little to no interpretation in 1976, to part-time interpretation in 1977, to a full-time naturalist position in December 1978. In January through March, 1978, Joe Fowler in a split ranger-naturalist position, lived at Lake and commuted to Canyon on weekends to man the Warming Hut and rove the Canyon rims. The Warming Hut at Canyon was termed a 100 percent success. It was an opportunity to get the snowmobilers away from their machines. Once inside the hut to get warm, eat their lunches, etc., they asked lots of questions about the park. Intern Brian Swedberg initiated guided snowmobile tours around the Canyon rims on an experimental basis, while Frank Walker and Joe Halladay conducted two special 6-hour Tower-to-Hayden Valley snowmobile trips. Both types of trips were well received and initiated on a regular basis for the 1978-79 winter season.

For the 1978-79 winter season, a full-time naturalist was hired, (Mark Marschall), to live and work at Canyon. A Young Adult Conservation Corps member was hired to man the Warming Hut and shovel the rims, (Beth Gibbs). Daily 1:00 p.m. guided snowmobile tours of the rims were offered beginning December 16. Weekly tours of Dunraven Pass were scheduled on Sundays from December 31 through March 11. The Canyon Winter Guide was revised, a new parkwide winter map was developed, a new Yellowstone caldera overlook exhibit was developed, and a new winter exhibit on Bison in Hayden Valley was designed and installed.

One of the major changes was the addition of a hot food outlet in the Warming Hut, run by the Yellowstone Park Company. Over 1,100 winter visitors entered the Warming Hut in the last two weeks of December 1978, as compared to 5,400 for the entire 1977-78 winter season.

The South District Naturalist spent approximately 50 percent of his time in the district in the winter season. Winter use in the Canyon area is increasing and we are trying to properly manage the use. Unfortunately, to meet winter objectives, we have had to cut into our summer operation. There will be one less summer position at Grant next year.

Canyon: The Canyon Visitor Center was open from May 14 until October 21. Visitation was record high in the Canyon Visitor Center with 460,289 visitors, as compared to 389,215 last year. This was an increase of 71,074, or 16 percent over the

previous year. In the last two years, visitation has increased 34 percent, or 143,553. With over 5,000 people per day in July and August, there was a tremendous demand on each interpreter. Unfortunately, due to a lack of regular National Park Service personnel, we have had to enlist assistance from one Student Conservation Aid (SCA), and approximately 15 Volunteers-In-Parks (VIP's). A minimum of two more summer interpreters are needed to meet these heavy demands. There are now 8 seasonal interpreters at Canyon as compared to 12 in 1976.

The popular Photo Walk was dropped at Canyon this year when Naturalist Randy Fong entered the Co-op program at the Denver Service Center. A new Wilderness Hike was initiated by Assistant District Naturalist Ted Parkinson. This trip to some old bear dens was an instant success. An average of 28 visitors per walk went on one of the 354 Canyon Rim Walks offered. The all day hike up Mt. Washburn drew an average of 30 visitors for each of the 26 hikes offered. Additional roving interpretation was initiated on the south rim and in Hayden Valley.

Special tours were given to various college and university groups, the Yellowstone-Teton women's group and the "Canyon Lodge Savages." The two new interpreters, Brian Swedberg and Mike Pflaum were outstanding, as was SCA Doris Tai. Noel Ary, Canyon Sub-District Naturalist, felt that this was one of the very best staffs and summers he had experienced at Canyon. Apparently the visitors felt the same, judging from the many complimentary letters received by the park.

Lake-Fishing Bridge: The Fishing Bridge Visitor Center was open daily from May 27 until September 23, 1978, with a total of 145,740 visitors. The traditional and ever popular guided walks, such as Pelican Creek and Storm Point continue to draw thousands of visitors during the summer. Over 63,000 visitors enjoyed the evening campfire programs presented at Bridge Bay, Fishing Bridge, and the Lake Yellowstone Hotel. During July and especially August, Star Talks were offered 5 times per week following selected evening programs with an average attendance of 63 visitors.

Several new programs were tried at Fishing Bridge this year. Fly fishing and spincast fishing demonstrations drew an average of 47 visitors per program. Programs such as Children's Walks, Backpacking Demonstrations, and the Photo Walk were among the most popular once a week programs. Additional roving duty was scheduled for Fishing Bridge, Mud Volcano, the beach in back of the Visitor Center, and in the evenings in Hayden Valley.

Personnel included new Sub-District Naturalist Harlan Kredit, five returnees, and four new naturalists (Doug Key, Mike Simon, Judy Visty, and Pete Burtchell.) Overall, Fishing Bridge experienced a very busy and successful summer.

Grant Village: The Grant Village Visitor Center opened on May 27 and closed September 23, with a total of 85,670 visitors. A regular schedule of conducted walks and roving assignments was maintained in the West Thumb Thermal Basin, and evening programs were presented nightly at the Grant Village Amphitheater. Evening programs were presented at Lewis Lake three times per week, including both a Mountain Man (Steve Bogen), and a Mountain Woman (Marlene Wassman.) The audio-visual program was revised by Hugh Crandall. The response to the new program has been mixed.

The Backcountry Use Permits were switched again to the Ranger Station during the heaviest use period. With new signing at the Ranger Station, this seemed to work very well for the visitors. Programs went fairly well at Grant; however, one of the new employees was terminated in early July for unsatisfactory performance, and the Co-op student resigned in early August to return to school. Supervisor Ed Leigh has decided not to return as Sub-District Naturalist next season. Ron Thoreson, Intake Trainee, very ably assisted in the regular interpretive program for approximately seven weeks at Grant. The four other employees did an outstanding job in keeping the whole program together. Several new programs such as Tale Tossing and Tuneful Tomfoolery, Perils and Pleasures of the Wilderness - A Practical Guide, and Cup, Comments and Questions were successful.

Six new thermal exhibits were placed in the West Thumb Basin, and a draft interpretive prospectus was written for the West Thumb Thermal Basin.

Big Hole National Battlefield: Yellowstone continues to provide staff and technical assistance to Big Hole National Battlefield with major maintenance projects, interpretation, resources evaluation, and planning.

Yellowstone Park Historian Tony Dean went to Big Hole on an orientation trip in August with Assistant Chief Naturalist John Tyers.

No new interpretive projects involving financial support by the Yellowstone Library and Museum Association were undertaken in 1978.

Park Historian Paul Hedren of Big Hole Battlefield transferred to Golden Spike National Historic Site in April 1978.

Yellowstone Library and Museum Association:

The Association had a gross income of $308,635, for an increase of 19 percent over 1977. Included in this figure are $5,000 from the Department of Energy as a grant to the Yellowstone Institute, and $9,695 income from students for tuition. Donations to the National Park Service totaled $45,067 for the year. Donations included free publications, operation and development of the research library, design and construction of additional exhibits, and shared rental of the bank building for the West Yellowstone Information Center.

One of the members of the Board of Trustees, Attorney Paul Frost of Washington, D.C., was killed in the crash of a private plane enroute to the May Board meeting. Also killed were Mr. Frost's two brothers-in-law, and his nephew. This was a tragic loss and a deep shock to everyone.

The Yellowstone Institute is now a viable activity of the Association, as described earlier. Its operation was greatly enhanced by the use of the bunkhouse at the Lamar Ranger Station as its base of operations. The Service has granted a Special Use Permit to the Institute for 1979 to allow its use again.

A separate sales facility was constructed in the Old Faithful Visitor Center, greatly relieving congestion at the information desk and providing a quiet place for visitors to browse through the books. Most of the 19 percent increase is attributed to this change.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

A. Law Enforcement: The Collateral Fine Schedule for Yellowstone National Park was revised by the U.S. District Court. This resulted in increased uniformity throughout Federal areas in the District of Wyoming. It also made violations of most of the Title 36, Code of Federal Regulations bondable, which will allow the violator under most circumstances to pay a fine by mail rather than having to make a mandatory appearance before the U.S. Magistrate.

The year 1978 was the first full year wherein violators of park rules and regulations dealt directly with the Central Violations Bureau in Denver, Colorado, rather than with the Chief Ranger's Office. This resulted in an appreciable increase in clerical work for the Law Enforcement Office without a corresponding increase in the overall efficiency of the Violation Notice System.

Fifteen rangers, including permanent and seasonal employees, received or were accepted for enforcement training at the Federal Law Enforcement Training Center at Glynco, Georgia. Training at this facility involves no expense to the park except for salary to the employee.

Twenty-three permanent or career-conditional rangers qualified for Law Enforcement Commission, as did forty-one seasonal rangers. In the case of many in the latter category, this involved considerable expenditure of personal funds and time in order to meet the requirements.

Three officers of the Wyoming Highway Patrol conducted two, two-day training sessions in Emergency Vehicle Operations at the West Yellowstone Helitak Base in June for seasonal ranger personnel. A total of 45 rangers participated, including rangers from four other NPS areas in the Rocky Mountain Region.

Two forty-hour training sessions on enforcement subjects were conducted; one in April and one in June. Commissioned personnel were thereby enabled to acquire the 40-hour annual refresher required to maintain their Commission. The sessions were attended by over sixty trainees, and were open to protection personnel from other NPS areas, as well as to members of local law enforcement agencies.

NON-CIRCULATING BOOK

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Statistically, comparisons with the previous year were as follows:

	1978	1977
Motor Vehicle Accidents	500	493
Case Incidents recorded	3357	2581
Violation Notices (Bonds) issued	1248	580
Magistrate's Court hearings	61	41
Part I Offenses	357	258

This denotes a marked increase in every category of law enforcement activity. The Part I offenses included one homicide, 29 burglaries, and 300 larcenies.

B. Regulations: Proposed revisions were made to the current fishing regulations primarily to eliminate some law enforcement problems, and to give protection to cutthroat trout on additional park waters through catch and release fishing.

C. Tort Claims: Of the twelve tort claims filed in 1977, all were concluded with the exception of two large claims, which are still in litigation. (Melvin Ford for $248,000 and Heather Tenney for $87,000).

In 1978 there were sixteen claims filed; again there were four of major nature. John Cheney, who was injured on the job as a plumber for the National Park Service, filed a claim for $150,000 which was denied. David Ahiborn fell on a small hole in the sidewalk of Hamilton Stores, Inc. at Fishing Bridge and filed a claim for $1238. Darragh Callahan was gored by a buffalo in Hayden Valley and filed a claim for $25,000. Elizabeth Henretig fell on a trail near Echinus Geyser at Norris Geyser Basin and filed a claim for $50,000. The other claims involved motor vehicle accidents between park personnel and visitors, two falls on boardwalks and other minor damage to personal equipment of visitors. Approximately one half of the minor claims were settled.

D. Weather Conditions: Snows were much heavier than normal during the past winter, with February 1978 courses measuring over 200 percent of normal water content. Spring snows were much lighter, but because of the heavy buildup during early winter, the snowpack persisted at higher elevations well through July. Stream runoff remained high through much of the visitor use season, making backcountry stream crossings difficult.

E. Fish and Wildlife Management

1. United States Fish and Wildlife Service Technical Assistance Project

The Yellowstone Fishery was monitored for the fifth year by the Volunteer Fisherman Report (VFR) cards in conjunction with park fishing permits. During 1978, 218,000 fishing permits were issued, and fishermen fished over 337,800 fisherman-days in the park. The non-fee fishing permit system provides valuable management information for regulation of the aquatic systems of the park. Yellowstone Lake cutthroat spawning runs were enumerated on Pelican, Clear and Cub Creeks through the operation of weirs and traps. The non-indigenous sucker spawning run on Pelican Creek was destroyed for the third consecutive year. The purpose of the trapping operations is to evaluate effects of sport fishing, and especially the 13-inch minimum size limit. The 1978 data indicates that the average size of trout in the population has continued to increase. This is a major portion of the biological goal of the regulation. Studies continued on the effects of fish populations on invertebrate species composition and abundance in relation to fish and fishless streams.

A water quality and ecological study was completed on Slough Creek in response to concern over possible mining activity in its headwaters area. Preliminary baseline limnological data was collected monthly from Lewis, Shoshone, Heart and Yellowstone Lakes due to their position in the "let burn" or wilderness zone. These data will be used in future studies concerning the effects of fire on the aquatic system.

The native and threatened species restoration program continued with planting of grayling fry in Canyon Creek and the transplanting of Heart Lake cutthroat trout to a refuge in Pocket Lake. A cooperative program with the Wyoming Game and Fish Commission was continued with a second transplant of unique Yellowstone cutthroats from Sedge Creek to a barren section of the Yellowstone River in the Teton Wilderness area.

Backcountry lake and stream surveys were accomplished on thirteen lakes and four streams.

A 206-page Annual Technical Report for the aquatic and fishery management program in Yellowstone Park was completed and distributed by the U.S. Fish and Wildlife Service office in Yellowstone National Park.

2. Wildlife Management: Significant movements of elk from the park occurred on both the Northern and Gallatin ranges, and special hunts were held by the State of Montana in each area adjacent to the park. In the Gardiner area, the hunt was held between February 1-20 and a total of 805 elk were harvested. The Gallatin hunt was held between January 6-22 and 159 elk were taken. This latter hunt was unsuccessful in reaching the harvest quota, so the State of Montana elected to trap additional elk under the terms of the Gallatin Elk Agreement. On February 10 they trapped 130 elk in the park's Daly Creek trap, but because of a ruling on brucellosis testing by the State Veterinarian, the elk could not be shipped and were released from the trap the next day.

The land trade proposal, mentioned in the 1977 report, has been shelved by the Gallatin Elk Committee "pending investigation of other options." Local public support for the trade was non-existent.

Three bear management actions and two human injuries occurred in 1978. There were only 57 recorded observations of bears in developed areas and no transplants were made. One black bear died from an accidental drug overdose during a trapping operation at Indian Creek Campground. Two grizzlies were intentionally destroyed after causing several incidents in developed areas.

One serious injury occurred in June to a lone female hiker on the trail to Heart Lake. The victim was severely mauled by a sow (probable grizzly) with three cubs as she followed and attempted to photograph the bears. In a second incident, two male campers were attacked by a black bear while sleeping in a backcountry campsite at Grizzly Lake. The bear was feeding on food left on the ground near the sleeping men. One man was scratched and bitten. The men were cited for failure to store food properly in the backcountry.

A significant movement of bison down the Yellowstone River occurred last winter, with the first animals moving towards the north boundary in early February. As in 1976, a helicopter was engaged to herd the animals back upstream and a barricade was erected on the river trail at a point where the bison could not pass, either above or below the trail. Park personnel and YACC enrollees were used for herding on foot.

The initial downstream movement involved 23 animals, but this number increased to between 100 and 110 by the end of February. At no time were bison reported outside the park. The downstream movement subsided by late March, and by early April the bison were moving back into the Lamar Valley.

F. Wilderness and Backcountry Management: In 1978, overnight backcountry use decreased slightly from the 1977 level, but when viewed in the light of the overall travel increase, the per capita visitor use of the backcountry declined by 11.5 percent. This was at least in part due to poor June weather, heavy snowpack at higher elevations and high water conditions prevailing through most of the season.

G. Park Visitation: The park was open for public travel on the traditional May 1 opening date; however, because of the need to have the roads plowed earlier for administrative purposes, the entrances were open prior to May 1. The Beartooth Highway was open for travel by May 27.

Road closures for the winter began on October 15 when the Beartooth Highway and operation of the Northeast Entrance were closed for the season. The East, South, and West Entrances closed on November 11, 1978. Official opening for snowmobiles was on December 16.

Annual park visitation totaled 2,623,141 persons. This total reflects an increase of 5.4 percent over the previous year. Winter visitation -- January through April 1978 and November through December 1977 totaled 99,246 persons. This total reflects a decrease of 20 percent over the previous year during the same period.

H. Entrance and User Fee Collections

Station	Summer	Winter	Golden Eagle Passports	Total
North	$111,595.50	$ 2,547.50	$ 21,540.00	$135,683.00
West	305,801.00	18,486.00	49,510.00	373,797.00
South	30,528.50	2,201.00	8,590.00	41,319.50
East	213,420.00	918.00	50,200.00	264,538.00
Northeast	58,752.00	----	10,910.00	69,662.00
Total	$720,097.00	$24,152.50	$140,750.00	$884,999.50

In addition to fees collected from Single Visit Permits and Golden Eagle Passports, 15,206 Golden Age Passports were issued free of charge to persons 62 years of age and older.

Campground fees were collected in 14 campgrounds (12 regular plus two group campgrounds) approximately from June 17 through September 9. The amount collected totaled $442,323.74.

I. Special Use Permits: The Visitor Services Office issued 30 Special Use Permits during 1978.

J. Central Communications Center Records Summary

	Year		
	1976	1977	1978
Employee Vehicle Registration	2,525	2,442	2,269
Visitor Identification Notices Percent Located	544	543	510
Backcountry Permits Recorded	7,154	8,099	7,770
No. of People on Permit	19,424	23,135	24,201
Teletype Messages Sent on Law Enforcement Teletype System	2,116	1,965	3,284
NCIC Inquiries	809	1,031	1,632
Law Enforcement Record Checks	2,500	3,278	4,163
All Points Bulletins	49	21	34
Field Interrogation Cards Filed	622	681	1,427

K. Fire Management

i. Structural Fires: Fire Brigade training took place in all Sub-Districts during the summer. Automatic sprinkler systems, smoke detection and emergency lighting units were installed in four new Yellowstone Park Company and three YACC dormitories built by the Park Service this year. Emergency lighting units are not operational in all hotels in the park. Total property loss this year was estimated at $9,100 as a result of two fires. No injuries were reported as a result of structural fires.

ii. Wildland Fires: Forest fire activity was below normal in 1978 due to frequent showers and cool weather. Twenty-four fires were reported, and the total area burned was 13.5 acres. Twelve of the fires were caused by lightning and five of these were allowed to burn for a total of 6.3 acres. Total area burned by the nineteen suppressed fires was 7.2 acres.

Yellowstone Rangers and Technicians participated in interagency training as students and instructors at West Yellowstone Interagency Fire Center; Missoula Aerial Fire Depot; Grand Canyon National Park; Mesa Verde National

Park; Boise Interagency Fire Center, and an Interagency Team Seminar at Albuquerque, New Mexico. Two 20-person YACC fire crews received training, but were not used due to logistical problems.

Park personnel were dispatched to North Cascades National Park and Rocky Mountain National Park on fire assignments. No outside overhead or crews were requested for fire duty in Yellowstone this year.

iii. Helicopter Operations: Helicopter use in Yellowstone began in early February with a bison control program on the Yellowstone River. One Bell 47G helicopter was hired and used until early April. The bison operation involved reconnaissance, ferrying people to expedite herding, the hauling of material for a barricade and actual herding of the animals. This year people were stationed at Lower Blacktail cabin and we were able to release the aircraft for several short periods of time throughout the operation. Total flight time was 86.5 hours for Schellenger Helicopters of Missoula, Montana.

A Hiller SL-3 owned by Hawkins and Powers Aviation of Greybull, Wyoming, and an Alouette III owned by Inland Helicopters of Grants Pass, Oregon, each had 90-day contracts. The SL-3 was stationed at Mammoth during June and at West Yellowstone during July and August. The Alouette III was stationed at Mammoth during July, August and September.

Two other helicopters were used during the summer. An Alouette III was brought in for normal activities while our aircraft were being used in support of the Presidential visit, and a Jet Ranger was used for a Medivac to Jackson from the South District.

Fire use of helicopters was only 25 hours due to a very slow fire season. There were 25 search and rescue operations involving the helicopters for a total of 53 hours flown. For the first time in several years no bears were moved by helicopter within Yellowstone National Park, and only one grizzly was transplanted for the Montana Fish and Game on the Gallatin National Forest. Total use was 298.3 hours for the four helicopters on contract, or under agreement, during the year. Outside agencies again helped with guarantees.

L. Forestry Program

i. Soil and Moisture Conservation - Soil and moisture conservation project consisted of noxious waste

detection and landscaping work, following the removal of hazard trees. Detection and control of Linaria Dalmatica continued on some roadside areas. Manual grubbing was the only method of eradication used. A survey of the Mammoth area indicated little significant increase in incidents of toadflax, compared to the 1975 season.

A Vermeer Diggin Dutchman was used to obliterate stumps left by the removal of tree hazards in some of the developed areas of the park.

ii. Insect and Disease Detection - Two aerial reconnaissance flights were flown. Spruce bud worm infestation has not increased in the area this past year, but caused severe defoliation of Douglas Fir in the north end of the park.

The pine bark beetle is continuing to work north along the west side of the park and is no longer attacking trees in the southwest corner of the park.

The Forestry crew examined 30 plots for signs of blister rust and host species. This study was funded by the United States Forest Service, and the results are being compiled by state and private forestry crews and the U.S. Forest Service, Region I.

iii. Hazard Identification and Removal - Major emphasis was given to the identification and removal of tree hazards in areas of high visitor use. Maintenance crews performed the actual removal of trees along the highway between Norris and Canyon. All other work was performed by the Forestry crew. All turnouts, campgrounds, picnic areas and developed areas have been worked, plus work has been completed on about one half of the park's road system. Three tree failures resulted in damage during the 1978 season. Each failure was investigated by foreman ranger personnel with followup investigation by Forestry Office personnel.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

M. Research Accomplished (Resulting in Publications)

Thomas D. Brock, Thermophilic Micro-organisms and Life at High Temperatures, Springer-Verlag, New York, Berlin, Heidelberg, May 1978.

Edward R. Cox, Preliminary Study of Wastewater Movement in Yellowstone National Park, Wyoming, July 1975 through September 1976, USGS Survey, Open File Report 78-227

Edward R. Cox, Results of Monitoring Wastewater Effluent in Yellowstone and Grand Teton National Parks, Wyoming, July 1974 through June 1975.

Edward R. Cox, Iron in Water Near Wastewater Lagoons in Yellowstone National Park, Wyoming, Journal Research USGS, Vol. 6, No. 3, May-June 1978

H. Craig, et al, Helium Isotope Ratios in Yellowstone & Lassen Park Volcanic Gases, Geophysical Research Letters, Paper No. 8L1106, Oct. 10, 1978

Don G. Despain, Effects of Natural Fires in Yellowstone National Park, Information Paper No. 34, July 1978

Andrew Nichols French and Der Voo Rob Van, Absaroka Mountains, Yellowstone National Park - A Summary Report of a Paleomagnetic Study of Lower Eocene Volcanics, June 1977 through June 1978

Steve Gniadek, Some Aspects of Avian Ecology Following the 1974 Trail Creek and 1976 Divide Fires in Yellowstone National Park, Final Research Report - National Park Service, YELL-N-98a, August 1977

Douglas B. Houston, The Northern Yellowstone Elk-- Winter Distribution and Management, Research Report, Yellowstone National Park, YELL-N-29b, April 1978

Calvin M. Kaya, Reproductive Biology of Trout in a Thermally Enriched Environment: The Firehole River of Yellowstone National Park, 1978. Final Report to U. S. Department of Energy.

Richard R. Knight, et al, Yellowstone Grizzly Bear Investigations. Annual Report of the Interagency Study Team, 1976, Misc. Report No. 10.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

M. Research Accomplished (continued)

Richard A. Levinson and Ronald W. Marrs, The Use of Remote Sensing for Establishing a History of Forest Fires in Yellowstone National Park, Contract No. CX-1200-7-B033, November 20, 1978

Eric J. Loudenslager and Robert M. Kitchin. Genetic Differentiation of Cutthroat Trout Population in Grand Teton and Yellowstone National Parks, May 15, 1978, YELL-N-96.

Mary Meagher, Evaluation of Bear Management in Yellowstone National Park, 1977. Research Note No. 8, February 10, 1978

Mary Meagher, Big Game of North America, Chapter 8, "Bison" Wildlife Management Institute, 1978.

Brooks E. Martner, Climatological Studies of Yellowstone and Grand Teton National Parks, Final Report, 1977.

M. M. Skinner, Sedimentation and Meandering of the Yellowstone River from the Yellowstone Lake Outlet to the Upper Falls, June 1977.

Robert E. Stauffer and John M. Thompson, Phosphorus in Hydrothermal Waters of Yellowstone National Park, Wyoming, Journal Research, USFS, Vol. 6, No. 6, December 1978, pp. 755-763.

Jon E. Swenson, Prey and Foraging Behavior of Ospreys on Yellowstone Lake, Wyoming, Journal of Wildlife, 42 (1): 1978, pp. 87-90

A. H. Truesdell, et al, Sulfate Chemical and Isotopic Patterns in Thermal Waters of Yellowstone Park, Wyoming, USGS Open File Report 78-701, pp. 435-436.

John D. Varley, The Rationale for a 13-Inch Size Limit on Yellowstone Lake, Information Paper No. 33, June 1978.

Ernest R . Vyse, Comparative Genetics of Yellowstone Park, Montana, and Arctic Grayling Populations, Contract No. CX-1200-7-B029.

John Weaver, The Wolves of Yellowstone, Natural Resources Report No. 14, 1978.

III. RESOURCE MANAGEMENT AND VISITOR PROTECTION

M. Research Accomplished (continued)

U. S. Fish and Wildlife Service, Division of Fish Resources, Yellowstone National Park, Fishery and Aquatic Management Program, Annual Project Technical Report, Calendar Year 1977.

Theses Received

Kenneth C. Biesinger, Studies on the Relationship of the Redside Shiner (Richardsonius Balteatus) and the Longnose Sucker (Catostomus Catostomus) to the Cutthroat Trout (Salmo Clarki) Population in Yellowstone Lake, Master's Thesis, Utah State University, 1961.

Paul R. Cleary, A Recommended Sampling Procedure for Studying Back-country Use in Yellowstone National Park, Master's Thesis in Water Resources, University of Wyoming, 1978.

Richard I. Ellis, Movements and Concentration of Marked Elk on the Winter Range (Northern Yellowstone Elk Herd), Master's Thesis, University of Montana, 1965.

Dean Chalmus Graham, Grizzly Bear Distribution, Use of Habitats, Food Habits and Habitat Characterization in Pelican and Hayden Valleys, Yellowstone National Park, Master of Science Thesis, Montana State University, November 1978.

David C. McAllister, Hydrogen Sulfide Damage to Lodgepole Pine in Yellowstone National Park, Master of Science Thesis, University of Montana, 1976, YELL-N-84.

Debra Struhsacker, Mixed Basalt-Rhyolite Assemblages in Yellowstone National Park, The Petrogenetic Significance of Magma Mixing, Master of Science Thesis, University of Montana, 1976.

George Zandt, Study of Three Dimensional Heterogenity Beneath Seismic Arrays in Central California and Yellowstone, Wyoming, Ph.D. Thesis, MIT, July 1976.

IV. MAINTENANCE

A. Buildings: New roofs were installed over three trailer houses within the park. Building # 804, an eight-unit apartment at Canyon was reroofed: a gable type roof was installed to facilitate winter operations. The comfort station at Madison Picnic Area was also reroofed to provide for winter operations.

Four trailers were rehabilitated for YACC staff use. A modular dormitory was relocated from a Utah Job Corp Center to the park for seasonal quarters. The building was secured for the winter awaiting spring rehabilitation.

The interiors of three Madison Campground comfort stations were rehabilitated. The Photography Shop was relocated from the Mammoth Museum building to the Blacksmith Shop building during construction work on the Museum building. Part of the North District Storehouse was remodeled to be used as a temporary kitchen for the YACC.

The exteriors of 61 structures throughout the park were painted. Interior painting was completed on eight houses, ten apartments, and a ranger station throughout the park. Foam insulation was applied on the interior roof of the Mammoth Clinic in an effort to retain some heat and prevent freezing of the utility systems, which are located in the attic. This has proven successful, since temperatures of -40° has not caused any freeze up of utility lines. Hundreds of storm windows were repaired and constructed.

A new burner and heating box was installed at the Lake Hospital, and a circulating pump and new piping was installed in the nurses' dorm.

B. Utilities: The solid waste transfer station sites were started at Lake and Mammoth. The dumping areas and loading ramps were completed and a contract awarded for construction of a metal building at each site.

A temporary water treatment facility was constructed at Canyon and put into operation. This filtration system should eliminate potential problems of contamination. Utility systems were completed for the new concession dormitories at Mammoth, Lake, and Old Faithful.

Wells were drilled at Slough Creek and iodination vaults were installed. Because of cold weather, final installation cannot be completed until spring.

The water monitoring laboratory at Mammoth was updated and approved by the Environmental Protection Agency.

Approximately one third of a water pollution control alarm system, consisting of alarm signals from thirty points of potential water pollution, was installed.

C. Roads and Trails - Fifteen miles of chipseal were completed from Arnica Creek to Bridge Bay; 7.5 miles on Sylvan Pass, and 5.5 miles north from Fishing Bridge Junction towards Canyon.

The Lake Hotel cabin area and the Lake National Park Service Shop were halfsoled. Also, 1.5 miles of road south of Otter Creek were halfsoled.

Base coarse and a 2" surface were placed on the Canyon trailer village roads. Fill material and peneprime was placed on the Lake area solid waste transfer station site.

Rehabilitation of 3.8 miles of the Gibbon Meadow road was completed. This included drainage, removal of soft spots, replacement of subbase, base coarse, and a 2" surface. This work was initially slated for contract; however, it was ultimately accomplished by day-labor forces.

Construction contract work included thirty-two miles of the Beartooth Highway and Northeast Entrance road, and center line striping of the entire park road system.

D. Park General - The entire Maintenance Organization was reevaluated with respect to proper classification and work alignments. The recommendations of the park were accepted by Region, new position descriptions were prepared for all employees, and proper classification actions were taken within the current guidelines.

E. Energy Conservation - Numerous buildings were insulated throughout the park. New storm windows were constructed and installed on numerous buildings, and many existing storm windows were repaired.

Approximately thirty wood stoves were installed, primarily in quarters, and are capable of serving as the primary source of heat.

A move to smaller vehicles was begun, with the purchase of four compact pickups. A Cushman three-wheel mini-truck was used by the paper picking crew last season at Madison Junction.

An Energy Conservation Committee was formed and a detailed list of retrofit needs compiled.

F. Construction: Denver Service Center Field Office, Yellowstone

Six contracts were advertised and awarded during 1978. The contract for the construction of four employee dormitories was awarded early in the year and was accepted as substantially complete in August. This provided for concessionaire housing for 400 people.

The Mammoth School storage addition was awarded in July and accepted as being substantially complete in October.

A temporary water treatment facility was constructed at Canyon to provide treated water to the public until a complete, permanent plant is constructed. This was awarded in July and accepted as substantially complete in November. Water at Canyon during the summer was provided by an old sand filter of limited source and capacity, which was renovated by Denver Service Center and Yellowstone personnel in the spring. Water conservation was stressed heavily to allow this old filter to keep up with the flow. The temporary plant will alleviate this shortage.

The first phase of the Mammoth Water System was awarded in September and the Adaptive Restoration of the Visitor Center/Museum - Building # 1 - was awarded in October. The water system will not be put into operation until March 1979, but the Museum work progressed through the demolition stage by the end of 1978.

The repair of the high bridge over the Gardner River was completed under the direction of the Federal Highway Administration.

All punch list items were completed and final payment was made for the Old Faithful and Canyon Wastewater Treatment Facilities, for the Tower Sewer System, and for the Canyon Rim comfort stations wastewater collection system.

Preliminary investigations, soil reports, environmental assessments and preliminary drawings were completed for the remainder of the Mammoth Water System, as well as for the Canyon and Old Faithful Water Systems. Preliminary investigations, soil reports, and preliminary site selections were accomplished for the proposed water systems at Lake, Grant Village, Norris, Madison, Tower Area, Beartooth Road Camp, Northeast Entrance,

Lamar, Pebble Creek, Stevens Creek, South Entrance and Pechler. All work was accomplished by an A/E firm from Denver, Colorado.

Field data was collected for water quality for all developed areas of the park.

Information on existing sewage collection systems at Lake, Bridge Bay, Fishing Bridge, Canyon, Grant Village, and Old Faithful was collected and is being drawn up.

Final data was collected for the proposed Grant Village Maintenance Shop.

Grover Barham - Chief, Division of Youth Activities, National Park Service, Department of the Interior, Washington, D.C.

John P. Barham - Center Director, YACC, Yellowstone National Park

At the conclusion of the ceremonies, Mr. Grover Barham planted an aspen tree to commemorate the dedication ceremonies.

B. Media Relations and Public Affairs: A total of 840 man-hours were spent escorting 340 special visitors in 1978. Public Affairs Office personnel contributed 773 hours of this time and other park personnel contributed 67 hours. Thirty-nine groups visited the park during the year, and fifty-five visitors came to photograph for television and motion pictures.

A total of 295 days were spent in Yellowstone by 348 special visitors. The breakdown according to individual months is as follows:

	SPECIAL VISITORS TO YELLOWSTONE	DAYS SPENT IN PARK
January	23	19
February	1	2
March	8+	16
April	2	1
May	43+	21
June	109+	52
July	45+	50
August	73	66
September	20	25
October	23+	13
November	1	30

+ Indicates additional members, such as film crews, student groups, and family members.

The Ambassadors from Iran and Australia visited the park in July; Mrs. Margaret Jay, wife of the British Ambassador; and the Belgian Ambassador were September visitors.

An African dignitary group of twelve people interested in ecology and tourism visited the park in July. Over 60 man-hours were spent in preparation of seminars and guided tours for this group.

Six superintendents from Canadian Provincial Parks visited Yellowstone National Park in September. They were interested in studying Yellowstone Park management in an effort to improve Canadian Parks management techniques.

Honorable Joe Skubitz and Honorable Clarence D. Long, Representatives from Kansas and Maryland respectively were park visitors in August, and Jeff O'Neal, of the House Public Works Committee, was a July visitor.

Lodging, meals, flights (both arrival and departure), activities, and information packets for the Regional Superintendents' Conference were coordinated through the Public Affairs Office. All media contact and advertising for the YACC dedication was also coordinated through the Public Affairs Office.

Four YACC Corpsmembers worked under the direction and supervision of the Public Affairs Office during the year. Through such an exchange, corpsmembers are able to gain valuable insight into media relations, office procedures, coordinating plans for special visitors, and public relations activities. The Public Affairs Office also conducted a Clerical Orientation and Training Session for YACC Corpsmembers.

Twenty-four film permits were issued during the year, three of which were issued to persons, or companies, from foreign countries.

Seventy press releases and seven public service announcements were prepared and distributed to the media. This total is double that of 1977.

The Public Affairs Office assisted several television crews in doing special reports about the park. KSL-TV (Salt Lake City) did a special report for NBC on bear management, which included a personal interview with Superintendent Townsley. MTN-TV did a special report on thermal energy, and a group of reporters from various places including KUTV (Salt Lake City) did a special report on winter in Yellowstone National Park.

C. Safety: The Safety Program in Yellowstone National Park continues to receive high priority. A full-time Safety Manager remained in residence, and spent a large portion of his time out in the park. Parkwide Safety Committee meetings were held monthly. June through September these meetings were held at Madison, Canyon, Lake, and Old Faithful, and during the winter months at Mammoth. District safety representatives were appointed and they conducted meetings during the summer in their districts. Workcrew Tailgate Safety Meetings were held on a regular basis. The Parkwide Safety Committee consists of representatives from all divisions and from the concessioners. A representative from YACC is also included on the committee.

Prior to the start of the snowmachine season, training sessions on the maintenance and safety of the machines were conducted. These training sessions were held at the Vehicle Repair Shop and conducted by trained personnel. It is mandatory for any employee, who operates a snowmachine, to attend these classes. Each Division Chief is responsible for on-the-machine training of the over-the-snow operation of the snowmachines. A special Safety Meeting was held with winter survival as the topic.

Defensive driving classes were conducted during the year, with 276 NPS and YACC employees receiving certificates. All employees must have a course in defensive driving within 30 days after they obtain an operator's permit.

Numerous First Aid classes were held during the year, with NPS and YACC employees in attendance.

A comparison of accidents for the past three years is as follows:

	1976	1977	1978
Fatalities	2	5	5
Employee Accidents	45	39	46
Employee Vehicle Accidents	26	19	38

Two fatalities occurred when two people were thrown from a pickup truck bed and killed. Two fatalities occured when a group of Boy Scouts were crossing Shoshone Lake. A sudden storm came up and the two were unable to reach shore. One fatality occurred when a concession employee fell from the rear of a pickup and struck her head on a rock. A committee of employees was appointed to review each accident.

After each employee motor vehicle accident, a review team meets to discuss the accident, determine whether or not the accident could have been prevented, and decide upon the appropriate disciplinary action to be taken when warranted.

The Safety Manager attended a training session presented by NFPA (Life Safety Code 101), and also attended the Western Safety Conference in California during the year.

D. Auxiliary Programs:

1. Young Adult Conservation Corps (YACC): The YACC Camp continued to expand during the year, utilizing existing

Prior to the start of the snowmachine season, training sessions on the maintenance and safety of the machines were conducted. These training sessions were held at the Vehicle Repair Shop and conducted by trained personnel. It is mandatory for any employee, who operates a snowmachine, to attend these classes. Each Division Chief is responsible for on-the-machine training of the over-the-snow operation of the snowmachines. A special Safety Meeting was held with winter survival as the topic.

Defensive driving classes were conducted during the year, with 276 NPS and YACC employees receiving certificates. All employees must have a course in defensive driving within 30 days after they obtain an operator's permit.

Numerous First Aid classes were held during the year, with NPS and YACC employees in attendance.

A comparison of accidents for the past three years is as follows:

	1976	1977	1978
Fatalities	2	5	5
Employee Accidents	45	39	46
Employee Vehicle Accidents	26	19	38

Two fatalities occurred when two people were thrown from a pickup truck bed and killed. Two fatalities occured when a group of Boy Scouts were crossing Shoshone Lake. A sudden storm came up and the two were unable to reach shore. One fatality occurred when a concession employee fell from the rear of a pickup and struck her head on a rock. A committee of employees was appointed to review each accident.

After each employee motor vehicle accident, a review team meets to discuss the accident, determine whether or not the accident could have been prevented, and decide upon the appropriate disciplinary action to be taken when warranted.

The Safety Manager attended a training session presented by NFPA (Life Safety Code 101), and also attended the Western Safety Conference in California during the year.

D. Auxiliary Programs:

1. Young Adult Conservation Corps (YACC): The YACC Camp continued to expand during the year, utilizing existing

National Park facilities and vacant buildings owned by the Yellowstone Park Company, prior to completion of the permanent camp. Temporary dining facilities began in the Canteen Building, which was found to be inadequate in February. A portion of the park storehouse was renovated to provide temporary dining facilities for 70 people.

Recruitment of corpsmembers continued in the States of Montana, Idaho and Wyoming. By March the camp employed over fifty young adults, and enrollment peaked at 127 during the month of July.

Spike Camps were established throughout the year in almost every major developed area of Yellowstone. A satellite camp was established temporarily at Fort Laramie National Historical Site to assist in rehabilitation activities. Following the assigned work at Ft. Laramie, the program was terminated. The Spike Camps at Canyon Village utilized the old CCC facilities, which had accommodated YCC during 1977. Throughout the year, approximately 20 corpsmembers resided at Canyon Village. Rehabilitation of existing facilities at Canyon was started in November in the hope of extending seasonal use of the buildings.

Construction of the new Mammoth Hot Springs camp was started in May, and the first dormitory was ready for occupancy in July. The dining facilities and second dormitory were completed the first week in August. The general contractor for the new camp was Robert Taylor Construction Company of Bozeman, Montana. Preliminary landscaping of the grounds extended into October. Ben Howland, Landscape Architect (NPS retired), was contracted to assist in the formulation of a landscape plan. Corpsmembers assisted in the landscaping and painted all of the buildings.

Three steel buildings were purchased and delivered to the CCC utility area near the Mammoth Trailer Court. Erection began on the first of the three buildings in mid-summer. These buildings will be utilized as supply and workshops. The largest of the three buildings has been partitioned to accommodate multiple shop activities.

During the course of the year, corpsmembers were involved in National Park Service support activities, erection of steel buildings, vista clearing, building insulation, tree planting and general camp maintenance. The trail crew operated in the backcountry for sixty consecutive days and numbered 30 corpsmembers.

During the year, many large pieces of equipment were acquired

through open market purchase, surplus equipment and contract bids. Following is a brief list of equipment procured during the year: "Ditch Witch" trenching tractor, "Bobcat" loader/backhoe tractor, a bulldozer, "Vermeer" tree spade, Diesel-operated air compressor, hydroseeder, brush chipper, ten-passenger "Bombardier" snowcoach, and a "Bolens" lawn tractor.

Center Director John P. Barham transferred to a Bureau of Reclamation YACC program in Chickasha, Oklahoma, on November 4, 1978. Work Coordinator Bary A. Freet, was delegated as Acting Center Director, and at the close of the 1978 season a permanent Center Director had not been selected.

2. Volunteers-in-Parks - The Volunteers-in-Parks program continues to expand each year, with more and more highly qualified individuals contributing to the program. Participation doubled in 1978 over the previous year, while only $200 more in funding was received to cover the 10,672 hours of work donated.

Although housing and subsistence payments continue to remain at a minimum, this year it was possible to purchase various uniform items, orientation supplies, and thermal research supplies. This seems fitting, as the vast majority of the volunteers are involved with interpretation, visitor center assistance, and various types of research. The majority of volunteers are concession employees' family members, family members of employees in Yellowstone National Park, and park employees on their "off" time.

3. Youth Conservation Corps - One seven-day residential coeducational YCC Camp was operated in 1978. The camp opened on June 18, operating from the old messhall and dorms at West Thumb, and closed on August 12 at the new trailer camp, which was located at Grant Village. A complete mobile trailer camp was purchased consisting of: four ten-men sleeper cars, two washcars with showers and laundry facilities, one kitchen/dining car, one Camp Director quarters/infirmary/office car, one staff housing car with four separate rooms, each with a separate entrance, one tool crib car, and one gas operated power generator for a total of eleven units in all. Washcars and kitchen are self contained with large water holding tanks. Cook stoves and heating are all LP gas. The move from West Thumb to Grant Village was made approximately two weeks prior to the closing date of the camp.

Total operation of the camp was contracted to the Student Conservation Association, Inc. (SCA). They provided seven

qualified staff, with assistance from three SCA volunteer park and forest assistants on a part-time basis. Original enrollment was to be twenty-four, but this number was increased to twenty-eight prior to the camp opening. Although there was a shortage of female applicants (the State of Wyoming was able to provide only four alternate names), there were fourteen male and fourteen female enrollees. The camp budget was $213,900, including $155,000 for purchase of the mobile trailer units.

All enrollees were given the Multi-Media First Aid Course and a course in Canoe Safety and Handling. Work projects consisted of fish trap operation and rehabilitation, back-country cabin repair, trail maintenance and relocation, new trail construction, back-country campsite improvements, and camp construction and maintenance. All projects were in the southwest corner of the park in proximity to the base camp, in order to minimize travel time.

The appraised value of all projects was $46,585.73, with enrollees expending 7,549 environmental work/learning hours. Direct National Park Service costs for technical supervision was $3,201.00, the majority of which was for supervision of the Pelican Creek Fish Trap operation by Fish and Wildlife Service personnel ($2,464.00).

4. A Christian Ministry in Yellowstone Park/Gardiner-Mammoth Winter Ministry

These yoked interdenominational ministries are related nationally to "A Christian Ministry in the National Parks." The program is self-supporting, with funding obtained primarily from the offerings received at services sponsored by the ministry. No government funds are provided for support.

The ministry provides services of worship year-round for community residents and visitors to the park. During the winter months, the Resident Minister, Reverend Edward Purkey, conducts services at Mammoth Hot Springs in the Yellowstone Park Chapel. In addition, he provides marriage and family counselling for community residents. A winter intern team provided regular services of worship at Old Faithful during the winter.

During the summer season, the Christian Ministry arranged for forty-six college and seminary students to conduct the ministry activities for visitors and employees in the park. The staff came from thirteen different denominational backgrounds in 1978. Thirty-five interdenominational services

were held each week at various locations and times in the park. Attendance at those services during the summer totaled over 18,000, a five percent increase over 1977. Crisis intervention counselling and referral for social problems, assisting stranded visitors, and support for the hospitalized were also provided by the Resident Minister and the student staff.

The Christian Ministry again sponsored a series of "Christmas in August" choral services in three areas of the park. A choir of one hundred voices and a twenty-piece chamber orchestra comprised of seasonal employees and residents performed selections from Handel's "Messiah."

E. Status of Planning

1. Concession Inventory - Approximately forty people were in the park the entire months of September and October inventorying and assessing conditions of Yellowstone Park Company facilities. The group was made up of five teams, with one each at Canyon, Old Faithful, Lake and Mammoth, and the headquarter support team at Mammoth. Included in the teams were architects, engineers, facility managers, property specialists and clerical personnel. After the inventory was completed, the teams made recommendations regarding maintenance and rehabilitation requirements on the facilities.

2. Grant Village Area Development Plan - Denver Service Center personnel began work on revising this plan. Initial work included site analysis to be used in construction of that portion of the Grant Village developments, which are included in the '80FY construction program.

3. Telephone Service - A new Dimension telephone system was installed on the switchboard at Mammoth, which has greatly improved service, especially with regards to FTS calls. This was the beginning of fairly intensive discussions, which should result in a significant improvement in service over the next five to ten years. Direct long distance dialing capability is anticipated in the Spring of 1979. Discussions are underway with Mountain Bell on future planning needs regarding changes in the park, such as the Grant Village development.

The telephone line from Mammoth to Cooke City through the Lamar Valley will be improved beginning in 1979, utilizing microwave transmission techniques, with the prime benefit being removal of the existing overhead telephone line through

the Lamar Valley. This particular line has been a visual intrusion for years.

Additional microwave service to other locations in the park is in the initial planning/discussion stage centering around possible antennae locations on Mt. Washburn. Such a system would provide improved service, greater capability, and would eliminate dependence on underground cables.

F. Annual Objectives: The completion rate for the 1978 Annual Objectives was seventy-five percent. Each year the Objectives are reviewed to determine the status of those that have not been accomplished. During the year, the 1979 Annual Objectives were established and sent to the Rocky Mountain Regional Office.

VISITORS THIS MONTH

ENTRANCE STATION:		TOTAL	NORTH	WEST	SOUTH	EAST	NORTHEAST
TOTAL VISITORS	-1978	20680	13936	4897	1386	461	0
	-1977	19228	10695	6537	1524	272	0
	-1976	9116	3945	3994	856	271	0
	1977-1978(FOOTNOTE 1)	1452	3041	-1640	-138	189	0
	1977-1978(FOOTNOTE 2)	7.55 %	27.91 %	-25.09 %	-9.06 %	69.49 %	0.0 %
NON-RECREATIONAL VISITORS INCLUDED IN ABOVE TOTAL							
NON-RECREATIONAL VISITORS	-1978	441	441	0	0	0	0
	-1977	338	338	0	0	0	0
	-1976	124	124	0	0	0	0
	1977-1978(FOOTNOTE 1)	103	103	0	0	0	0
	1977-1978(FOOTNOTE 2)	30.47 %	30.47 %	0.0 %	0.0 %	0.0 %	0.0 %
RECREATIONAL VISITORS BY METHOD OF ENTRY							
TOTAL RECREATIONAL VISITORS	-1978	20239	13495	4897	1386	461	0
	-1977	18890	10557	6537	1524	272	0
	-1976	8992	3871	3994	856	271	0
	1977-1978(FOOTNOTE 1)	1349	2938	-1640	-138	189	0
	1977-1978(FOOTNOTE 2)	7.14 %	27.83 %	-25.09 %	-9.06 %	69.49 %	0.0 %
AUTOMOBILE PASSENGERS	-1978	12613	12613	0	0	0	0
	-1977	9854	9854	0	0	0	0
	-1976	3389	3389	0	0	0	0
	1977-1978(FOOTNOTE 1)	2759	2759	0	0	0	0
	1977-1978(FOOTNOTE 2)	28.00 %	28.00 %	0.0 %	0.0 %	0.0 %	0.0 %
RECREATIONAL VEHICLE PASSENGERS	-1978	482	482	0	0	0	0
	-1977	198	198	0	0	0	0
	-1976	277	277	0	0	0	0
	1977-1978(FOOTNOTE 1)	284	284	0	0	0	0
	1977-1978(FOOTNOTE 2)	143.43 %	143.43 %	0.0 %	0.0 %	0.0 %	0.0 %
BUS PASSENGERS-COMMERCIALLY ORGANIZED TRIPS	-1976	0	0	0	0	0	0
	-1977	0	0	0	0	0	0
	-1976	0	0	0	0	0	0
	1977-1978(FOOTNOTE 1)	0	0	0	0	0	0
	1977-1978(FOOTNOTE 2)	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %

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CUMULATIVE TRAVEL BY ENTRANCE STATION
JAN. 1, - DEC.31, 1978
VISITORS-YEAR TO DATE

ENTRANCE STATION:		TOTAL	NORTH	WEST	SOUTH	EAST	NORTHEAST
TOTAL VISITORS	-1978	2623141	380975	832653	764050	517203	128260
	-1977	2487084	318113	774429	727684	528854	138004
	-1976	2525174	326944	767308	741184	554489	135649
	1977-1978(FOOTNOTE 1)	136057	62862	58224	36366	-11651	-9744
	1977-1978(FOOTNOTE 2)	5.47 %	19.76 %	7.52 %	5.00 %	-2.20 %	-7.06 %
NON-RECREATIONAL VISITORS INCLUDED IN ABOVE TOTAL							
NON-RECREATIONAL VISITORS	-1978	4761	3453	46	693	22	547
	-1977	5151	3561	373	626	207	384
	-1976	5550	3079	1126	558	697	490
	1977-1978(FOOTNOTE 1)	-390	-108	-327	67	-185	163
	1977-1978(FOOTNOTE 2)	-7.57 %	-3.03 %	-87.67 %	10.70 %	-89.37 %	42.45 %
RECREATIONAL VISITORS BY METHOD OF ENTRY							
TOTAL RECREATIONAL VISITORS	-1978	2618380	377522	832607	763357	517181	127713
	-1977	2481933	314552	774056	727058	528647	127620
	-1976	2519224	323465	766182	740626	553792	135159
	1977-1978(FOOTNOTE 1)	136447	62970	58551	36299	-11466	-9907
	1977-1978(FOOTNOTE 2)	5.50 %	20.02 %	7.56 %	4.99 %	-2.17 %	-7.20 %
AUTOMOBILE PASSENGERS	-1978	1808086	266692	601719	516172	326628	96875
	-1977	1718917	219047	559558	473365	367588	99359
	-1976	1827094	242541	562306	512695	405098	104164
	1977-1978(FOOTNOTE 1)	89169	47645	42161	42807	-40960	-2484
	1977-1978(FOOTNOTE 2)	5.19 %	21.75 %	7.53 %	9.04 %	-11.14 %	-2.50 %
RECREATIONAL VEHICLE PASSENGERS	-1978	699212	99020	173211	221293	176562	29126
	-1977	661663	85507	162638	220972	146852	36594
	-1976	599662	71839	154503	206610	137465	29245
	1977-1978(FOOTNOTE 1)	37549	13513	9573	-5679	27710	-7468
	1977-1978(FOOTNOTE 2)	5.67 %	15.67 %	5.85 %	-2.50 %	18.62 %	-20.41 %
BUS PASSENGERS-COMMERCIALLY ORGANIZED TRIPS	-1978	39891	5822	14989	12944	5327	809
	-1977	38361	5337	14373	12189	5700	762
	-1976	36982	6438	11818	12294	5547	915
	1977-1978(FOOTNOTE 1)	1530	485	616	755	-373	47
	1977-1978(FOOTNOTE 2)	3.99 %	9.09 %	4.29 %	6.19 %	-6.54 %	6.17 %

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ENTRANCE STATION:		TOTAL	NORTH	WEST	SOUTH	EAST	[illegible]
BUS PASSENGERS - NON-COMMERCIALLY ORGANIZED TRIPS	-1978	23344	3536	6934	5829	6179	866
	-1977	21829	2667	5852	7561	4981	768
	-1976	15032	1579	3180	4546	4892	835
	1977-1978(FOOTNOTE 1)	1515	869	1082	-1732	1198	98
	1977-1978(FOOTNOTE 2)	6.94 %	32.58 %	18.49 %	-22.91 %	24.05 %	12.76 %
VISITORS ON PRIVATE OVERSNOW VEHICLES	-1978	34157	826	27709	3795	1827	0
	-1977	29168	953	22624	4186	1205	0
	-1976	29812	327	27129	1829	527	0
	1977-1978(FOOTNOTE 1)	4989	-127	4885	-391	622	0
	1977-1978(FOOTNOTE 2)	17.10 %	-13.33 %	21.40 %	-9.34 %	51.62 %	0.0 %
SNOWCOACH PASSENGERS	-1978	7185	0	4689	2496	0	0
	-1977	4513	0	2633	1880	0	0
	-1976	5611	259	3230	2064	38	0
	1977-1978(FOOTNOTE 1)	2672	0	2056	616	0	0
	1977-1978(FOOTNOTE 2)	59.21 %	0.0 %	78.09 %	32.77 %	0.0 %	0.0 %
VISITORS ON FOOT OR OTHER	-1978	6505	1626	3356	828	658	37
	-1977	7482	941	5178	905	321	137
	-1976	5031	212	4316	578	225	0
	1977-1978(FOOTNOTE 1)	-977	685	-1822	-77	337	-100
	1977-1978(FOOTNOTE 2)	-13.06 %	72.79 %	-35.19 %	-8.51 %	104.98 %	-72.99 %

WARNING: PRIOR TO 1977, THE COUNT OF THE ON-FOOT AND OTHER INCLUDES ONLY OVERSNOW ENTRANCES.

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VEHICLES BY ENTRANCE STATION THIS YEAR

TOTAL VEHICLES	-1978	794459	115455	257221	228586	154392	38805
	-1977	752621	97109	238312	217497	158051	41652
	-1976	768484	99095	241421	221094	165911	40973
	1977-1978(FOOTNOTE 1)	41838	18346	18909	11089	-3659	-2847
	1977-1978(FOOTNOTE 2)	5.56 %	18.89 %	7.93 %	5.10 %	-2.32 %	-6.84 %
AUTOMOBILES-EXCLUDING RECREATIONAL VEHICLES	-1978	547891	80813	182536	156413	98975	29354
	-1977	520869	66376	169560	142441	111386	30106
	-1976	553668	73569	170593	155364	122757	31565
	1977-1978(FOOTNOTE 1)	27022	14437	12776	12972	-12411	-752
	1977-1978(FOOTNOTE 2)	5.19 %	21.75 %	7.53 %	9.04 %	-11.14 %	-2.50 %

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CUMULATIVE VISITORS BY ENTRANCE STATION CONTINUED
JAN. 1, - DEC.31, 1978

ENTRANCE STATION:		TOTAL	NORTH	WEST	SOUTH	EAST	NORTHEAST
		**********	**********	**********	**********	**********	**********
RECREATIONAL VEHICLES	-1978	211866	30003	52484	67056	53500	8823
	-1977	200489	25938	49583	68776	45105	11087
	-1976	181713	21769	46622	62604	41656	8862
	1977-1978(FOOTNOTE 1)	11377	4065	2901	-1720	8395	-2264
	1977-1978(FOOTNOTE 2)	5.67 %	15.67 %	5.85 %	-2.50 %	18.61 %	-20.42 %
BUSES - COMMERCIALLY ORGANIZED TRIPS	-1978	1860	259	950	462	160	29
	-1977	2112	235	1107	561	185	24
	-1976	1972	273	927	556	186	30
	1977-1978(FOOTNOTE 1)	-252	24	-157	-99	-25	5
	1977-1978(FOOTNOTE 2)	-11.93 %	10.21 %	-14.18 %	-17.65 %	-13.51 %	20.83 %
BUSES - NON-COMMERCIALLY ORGANIZED TRIPS	-1978	882	101	224	289	216	52
	-1977	774	119	183	263	158	51
	-1976	501	48	104	169	154	26
	1977-1978(FOOTNOTE 1)	108	-18	41	26	58	1
	1977-1978(FOOTNOTE 2)	13.95 %	-15.13 %	22.40 %	9.89 %	36.71 %	1.96 %
PRIVATE OVERSNOW VEHICLES	-1978	26220	826	20517	3358	1519	0
	-1977	22523	880	17042	3591	1010	0
	-1976	23991	267	21669	1558	457	0
	1977-1978(FOOTNOTE 1)	3697	-54	3475	-233	509	0
	1977-1978(FOOTNOTE 2)	16.41 %	-6.14 %	20.39 %	-6.49 %	50.40 %	0.0 %
SNOWCOACHES	-1978	979	0	664	315	0	0
	-1977	703	0	464	239	0	0
	-1976	689	60	380	245	4	0
	1977-1978(FOOTNOTE 1)	276	0	200	76	0	0
	1977-1978(FOOTNOTE 2)	39.26 %	0.0 %	43.10 %	31.80 %	0.0 %	0.0 %
NON-RECREATIONAL TRAVEL (ALL VEHICLE TYPES)	-1978	4761	3453	46	693	22	547
	-1977	5151	3561	373	626	207	384
	-1976	5950	3079	1126	558	697	490
	1977-1978(FOOTNOTE 1)	-390	-108	-327	67	-185	163
	1977-1978(FOOTNOTE 2)	-7.57 %	-3.03 %	-87.67 %	10.70 %	-89.37 %	42.45 %

****

FOOTNOTE 1 - THIS IS THE DIFFERENCE IN NUMBERS FOUND BY SUBTRACTING THE PRIOR YEAR ENTRANCES FROM THE CURRENT YEAR ENTRANCES.
FOOTNOTE 2 - THIS IS THE DIFFERENCE IN PERCENTAGE FOUND BY DIVIDING THE NUMBER ABOVE BY THE PRIOR YEAR.
******** ASTERISKS MEAN THAT THE PERCENTAGE IS NOT MEANINGFUL, USUALLY BECAUSE ONE YEAR OR THE OTHER ENTRANCES WERE ZERO.

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U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE, YELLOWSTONE N.P., OFFICE OF VISITOR SERVICES,(307)-344-7381,EXT.283
DATE RUN: JAN 10, 1979

The number of visitors during the period between the establishment of the park (1872) and the beginning of this compilation (1895) was estimated to be not less than 1,000 nor more than 5,000 each year.

Year	Visitors	Year	Visitors	Year	Visitors
1895	5,438	1930	227,901	1960	1,443,288
96	4,650	31	221,248	61	1,524,088
97	10,680	32	157,624	62	1,925,227
98	6,534	33	161,938	63	1,872,417
99	9,579	34	260,775	64	1,929,316
		35	317,998	65	2,062,475
1900	8,928	36	432,570	66	2,130,313
01	10,769	37	499,242	67	2,210,023
02	13,433	38	466,185	68	2,229,657
03	13,165	39	488,936	69	2,193,894
04	13,727				
05	26,188	1940	526,437	1970	2,297,290
06	17,182	41	581,761	71	2,120,487
07	16,414	42	191,830	72	2,246,827
08	18,748	43	64,144	73	2,061,537
09	35,545	44	85,347	74	1,937,768
		45	178,296	75	2,246,132
1910	19,575	46	814,907	76	2,525,174
11	23,054	47	932,503	77	2,487,084
12	22,970	48	1,013,531	78	2,623,141
13	24,929	49	1,133,516		
14	20,250				
15	51,895	1950	1,109,926		
16	35,849	51	1,166,346		
17	35,400	52	1,350,295*		
18	21,275	53	1,326,858		
19	62,261	54	1,328,893		
		55	1,368,515		
1920	79,777	56	1,457,782		
21	81,651	57	1,595,875		
22	98,225	58	1,442,428		
23	138,352	59	1,408,667		
24	144,158				
25	154,282				
26	187,807				
27	200,825				
28	230,984				
29	260,697				

*Beginning in 1952 the figures represent travel during the calendar year instead of the period October 1 to September 30 as previously used.